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and Commercial Standards Monthly

March

ASA Works for Safe Clothing
For Women War Workers

(Article Page 691

1943

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RUTH E. MASON, Editor

Our Front Cover: Women now taking men's places in industry need protective work clothes well designed for safety, appearance, and fit. New ASA War Standards project is organized to help provide such clothing. *Photo Courtesy Todd Shipbuilding Corp.*

This Issue

ASA

Reg. in U.S. Pat. Off.

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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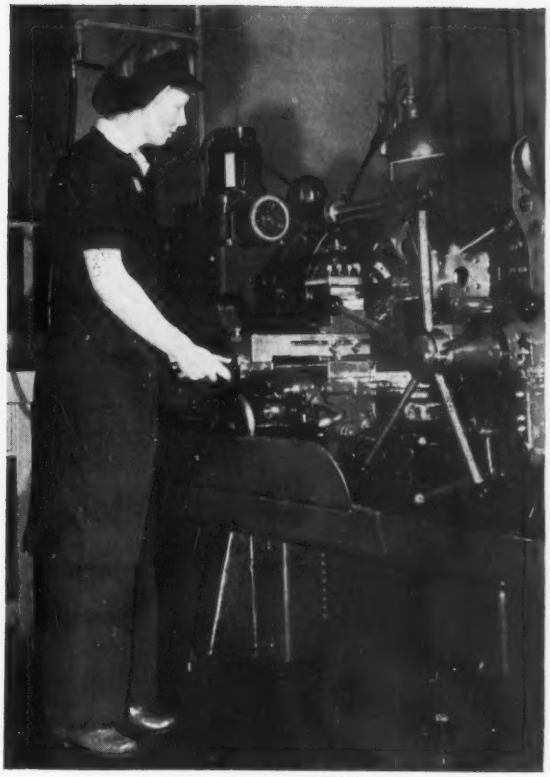
OPA Points to Need for Safe Work Clothes for Women

"Women's work and safety clothing is rapidly becoming an important necessity in the budgets of women engaged in war production. Since the demand has increased so rapidly and also since women are entering many occupations which are new to them, there is no general agreement among suppliers or users as to the most suitable types or serviceability and safety features of the garments. The very fact that the whole industry is in the process of development naturally creates problems for the Office of Price Administration in its attempts to develop a simple and equitable price regulation. In addition to serving this purpose the standards [being developed under the new ASA War Standards project] will help conserve materials and other resources, prevent accidents, and reduce absenteeism resulting from accidents."

—Willis S. MacLeod.
Chief of Technical Operations, Standards Division, Office of Price Administration.

Clothing the Woman War Worker

OPA and WPB ask for standards for serviceable garments to protect women in industry



Courtesy of Wright Aeronautical Corp.

NOW that thousands of women are entering war industries, the eternal question "What shall I wear?" assumes real significance. In many cases management has a ready answer, but too often the reply is "I'm not sure" or "Whatever you can get". And thus, clothing the woman war worker so that she will be safe and comfortable on the job becomes a major problem. Manufacturers and users alike are seriously concerned with this question, but since there is no agreement anywhere, general confusion is the result.

The Office of Price Administration, fully aware of this situation, has now requested the American Standards Association to initiate a war project to standardize women's work clothing. The request has also been endorsed and is supported by the War Production Board. In the request, stipulation was made that the standards should be designed so that if the garments are produced to meet the standards:

1. Simple price regulations in which price is effectively tied to quality will be facilitated.
2. The garments will have an adequate degree of serviceability consistent with the resources available for production and will furnish adequate protection against specific occupational hazards.
3. Conservation of critical materials and resources will result.

The ASA immediately started work on the War Standards project for Women's Work Clothes by undertaking an investigation of the situation. Several eastern war plants were visited and safety engineers as well as the workers themselves were consulted as to their experiences and problems in obtaining work clothing. The predominant complaint everywhere was "improper sizing and fitting" and "unsuitable fabric". Apparently manufacturers who previously specialized in work clothes for men and are now also making women's garments are not very familiar with feminine measurements and styling. They tend to manufacture a slightly altered man's outfit which they erroneously believe will adequately meet the needs of the feminine figure. On the other hand, dress manufacturers who are converting to work clothes manufacture are incorporating the usual style and fit factors, but are tending to overlook the vital safety and durability elements.

Too Much Emphasis on Gadgets

Where companies have purchased work clothing from some manufacturers who have taken into consideration the contours of the female figure, they have discovered that too careful attention has been given to contour. As a result the girls make an attractive appearance, but have very little room in which to breathe and move. Too often, also, emphasis has been placed on pockets, gadgets, fancy trimming, and the like.

Courtesy Todd Shipbuilding Corp.

Women who are learning to do many of the jobs formerly done only by men need protective clothing that fits comfortably but does not hamper movement

In such cases, it is found that specifications have not been used, nor safety engineers consulted, and therefore the product is impractical and useless.

Many war plants employing women, disgusted with what the suppliers have to offer, simply devise their own specifications and have the garments made especially for them. But here, they are forced to contend with added cost and limited supply. Also, the experience gained by such war plants is not available to others, and again duplication of effort and waste of valuable material occurs.

Thus the market is being flooded with coveralls, overalls, slack sets, slacks and jackets, work blouses, and other so-called work outfits—and these are variously made of denim, cotton twill, gabardine, chambray, corduroy, duck, wind-resistant fabrics, and many other kinds of material.

Shipyard Has Trouble

A famous shipyard which employs many women welders and burners is having considerable difficulty finding a suitable garment to go under the heavy leather trousers and aprons that are an essential part of the outfits. Those they have tried have proven unsatisfactory because of bad fit and because the blue dyes ran onto the girls' bodies and underclothing. Since ship-repairing cannot wait on the clothes problem, these girls have finally resorted to men's khaki shirts and pants.

Meanwhile the personnel and safety people at this shipyard continue to test different fabrics and examine the many types of garments submitted for approval. Their experience shows that when an outfit is adequately styled and shaped, it is usually evident that little or no attention has been given to safety features.

The leather trousers worn by welders and burners also are found to be incorrectly styled—when enough room is left for the hips, the waist tends to be too big and out of proportion. This is hazardous to the worker, as demonstrated by an incident involving one woman who had her trousers tied around her waist with a makeshift belt. Every so often she was compelled to put down her arc and "hoist" her pants. Finally the belt collapsed entirely, and in her haste to retrieve her trousers she dropped the welding instrument. A nasty leg burn was the result, yet apparently she was well-protected by a leather covering. This accident is not an isolated incident but one that is prevalent in the industry. It is obvious that standard specifications for women-welders' outfits are needed.

In one large aircraft plant where women work on grinding machines, drills, and band-saws, the clothing problem is a very serious one. Although the company provides free of charge two sets of navy coveralls, very few of the girls accept and wear these garments. Since these clothes are heavy, absolutely shapeless, and ill-styled, it is easy to understand the girls' reluctance to wear them. Even though our patriotic woman war worker earnestly wants to "do her bit", she still wants to maintain an attractive appearance while at work. When questioned, the girls admitted their dislike of the heavy, unattractive coveralls and said they most assuredly would wear protective work clothes if they were better designed.

Specifications Lacking

Another aircraft plant has finally solved its clothing problem—but only after a long and laborious period of experimentation! At first the only clothes they could find on the market were the impractical, glamorous slack sets and coveralls which completely disregarded the factors of durability and safety. Unable to find a suitable garment, the safety engineer called in a designer of women's clothes, and thus tried to construct a practical, safe outfit. Even this device proved unsuccessful since neither the designer nor the engineer could find any specifications which incorporated the necessary features of style and safety. Finally, after much wasted time and effort, a men's work clothing manufacturer provided the solution.

The girls in this aircraft plant wear a simple two-piece suit consisting of slacks and a jacket, with an apron to cover the whole. While the jacket is not shaped, it is properly sized to the feminine figure, and so allows for comfort and freedom of movement. Another feature of this company's work clothes program which has been very successful in getting the women to wear the specified outfits is to permit a choice between two colors and two types of fabric. This somewhat alleviates the feeling of regimentation and arbitrary conformity which is so repulsive to feminine vanity.

Another phase of women's work clothes, the safety cap, must be considered. Here, too, we find great variety and much disagreement as to the best kind of safety cap. And here, more than with any other phase of the work clothes problem, female vanity must be dealt with. The prime purpose of all these types of headgear is to keep the hair from becoming entangled in moving machinery, and to protect the head from dirt, oil mist or dust. There are skull caps, snoods, pliofilm caps, nets, legion caps, berets, kerchiefs, and turbans. However, milady finds fault with most of these hats—either they are ill-fitting, or too hot, or unattractive.

One plant wisely permits the workers to choose from among three types of headgear—an adjustable beret, a pliofilm cap with visor which also has a net section to assure coolness, and a button-on turban which cleverly fastens to avoid loose ends. All these have the essential safety features. Apparently the pliofilm cap, which is attractive, light and practical, is the most popular model.

Women Wear Men's Work Gloves

When it comes to providing gloves for the woman worker, the problem becomes even more complex. So far the glove manufacturers have completely ignored the needs of women in industry. Consequently we find women wearing men's gloves—and these in most cases are too big and heavy. Some war plants have furnished specifications to glove manufacturers, but on the whole this phase of women's work clothes is the most neglected.

Aside from the safety and style features of work and safety clothes for women, those of durability and availability of fabric must be considered. Many of the materials available are not dyed with fast colors, and so they do not stand up well after several launderings. Frequent washings are very necessary in some kinds of work since the garments become saturated with oils which can be injurious to the skin. A common complaint is that the fabrics used are too hot in the summer. Yet sturdy and closely-woven fabric is a "must" where protection against flying shavings is needed. One famous watchmaking company is trying to find an absolutely lintless fabric for the uniforms worn by girls who make very fine precision instruments for airplane panelboards. Synthetics have been tried but discarded because of laundering difficulty. As yet a suitable material is to be found.

It is evident that clarification of the entire woman's work clothing problem is of vital importance at this time. The American Standards Association in approaching this project is attempting to bring together both suppliers and users and so reach an understanding as to the standards and specifications that will produce a product satisfactory to all.

In order to accomplish this, the OPA has indicated that the standards should include the following principal elements:

1. Determination of the minimum number of types of women's industrial work and safety clothes necessary adequately to fulfill the functional requirements of the various occupations.
2. Detailed garment construction requirements, including size standards for each type.
3. Specifications for fabric, trim, hardware, and any other materials to be used in each type of garment.
4. Recommendations as to proper nomenclature of the garments, and recommendations for labeling and marking.

It is hoped that interested organizations will write to the ASA and submit their experiences and problems in regard to clothing women war workers so that they will be safe, comfortable, and efficient on the job.

ASA Appoints War Committee On Code for Lubricants

An ASA War Committee has been appointed by the chairman of the Standards Council to develop an American War Standard Code for Lubricants for Machinery. The request for the code was made recently by the National Machine Tool Builders Association and the War Production Board. Its purpose is to standardize the designation by color of greases and oils to be used for specific parts of a machine. It has been proposed that the identifying color be applied to the machine part to be lubricated as well as to the container carrying the lubricant for that part, thereby preventing costly mistakes on the part of the operator.

A meeting of this new ASA War Committee is scheduled to be held this month.

The membership of the new War Committee is as follows:

C. B. Veal, Cooperative Research Council, *Chairman*
John Rome Battle, J. R. Battle and Company
G. K. Brower, American Air Lines, Inc.
J. B. Macauley, Jr., Chrysler Corporation
R. J. S. Pigott, Gulf Research and Development Company
H. W. Samson, General Electric Company
D. Samuelson, Warner and Swasey Company: F. O. Hoagland, Pratt and Whitney Division, Niles-Bement-Pond Company, *alternate*
T. C. Smith, American Telephone and Telegraph Company
George P. Palmer, Socony-Vacuum Oil Company
Captain A. H. Sundor, Frankford Arsenal, War Department
J. P. Costello, Bureau of Ships, Navy Department

Automotive Council Asks for War Standard on Cylindrical Fits

ASA War Committee Will Revise 1925 Standard and Add Gage Specifications

THE Automotive Council for War Production, representing more than 500 industrial concerns, has asked the American Standards Association and the War Production Board for the establishment of an American War Standard for Cylindrical Fits, including specifications for gagemaker's tolerances and permissible gage wear, to be developed as soon as possible. This means the revision of the Tentative American Standard Tolerances, Allowances, and Gages for Metal Fits (B4a-1925) by an ASA War Committee and the addition of gage specifications to such a revised standard.

This request, received by the ASA directly from the Automotive Council and also transmitted to it by the WPB, has led to the initiation of an ASA War project. An ASA War Committee to handle the work is currently being organized.

In the letter from the Automotive Council, dated February 24, George Romney, its Managing Director, said in part:

"Need for a workable standard in this field is emphasized by the fact that such a standard would help materially to eliminate problems that are now incurred in the inspection of parts made by subcontractors, would increase assurance of interchangeability of such parts, and would result in closer adherence by the shop to engineering specifications of tolerance and fits."

The request was made as a result of a meeting held February 2 under the auspices of the Automotive Council at its headquarters in Detroit. The memorandum concerning this meeting which was attached to the Council's request, follows.

Memorandum

Special Meeting on Standardization of Cylindrical Fits, Methods of Gaging Inspection, and Gage Control

This meeting was called at the offices of the Automotive Council for War Production to consider the question that the specification of gagemaker's tolerances, permissible gage wear, and other variables in gaging practice was not uniform within American industry. It had been reported that the lack of a uniform standard in this field created severe problems in plants in the automotive industry which are now engaged in many special war production projects involving machining to close limits and assembly with closely controlled clearances.

Sixteen representatives of five principal automotive manufacturing concerns participated in the meeting, the individuals coming from the fields of engineering, production, and inspection. The products in which they are concerned currently in manufacturing include such items as airplane engines, instruments, ordnance, fire control apparatus, and other precision products.

The initial statement of the problem was made by one of the representatives of the inspection department of a firm engaged in the manufacture of an airplane engine. In this instance, the requirement of making more than 40,000 inspections per engine, and maintaining in use at all times about 100,000 gages, necessitated periodic checking of gages at a rate of 5,000 gages a day. Search for a general standard specifying what tolerances should be given the gagemaker in the manufacture of these gages, how these gagemaker's tolerances should be located relative to the limits of the part, and to what extent the gages should be permitted to wear, had revealed that no such American Standard is in existence.

Related material in existence includes, however, the Tentative American Standard for Tolerances, Allowances and Gages for Metal Fits (B4a-1925) and a pamphlet *Tolerances for Cylindrical Fits*, by John Gaillard, published by the American Standards Association. The standard, B4a-1925, in spite of its title, did not contain any specifications for gaging practice, and was in this respect incomplete. Moreover, this standard, it had appeared from investigation, is not used in the automotive industry and has not won wide acceptance

in other industries. It was stated in the meeting that the industrial practice does not agree with a principle laid down in Section 1 of the Tentative American Standard in the words "the extreme sizes for all plain limit gages shall not exceed the extreme limits of the part to be gaged."

The Gaillard pamphlet, while pointing out that no standard system of fits is complete without specifications for gage tolerances and permissible gage wear, stated that the latter data have not yet been laid down in any generally adopted standard.

Inspection Departments Translate Drawings

It was pointed out in the discussion at this meeting that in the absence of an American Standard for gagemaker's tolerance and permissible gage wear, it has become common practice for the inspection department to translate the part limits given on a drawing into gaging practice which is expected to result in the desired performance of the mating parts in their assembled condition. And in the absence of standard gaging practice, this translating of the drawing limits might be done in different ways, for example, in the several plants making the same or identical part. As a result, the fit of parts made to one set of gages might give the correct fit when assembled to their mating parts, while parts made to another set of gages might not give a satisfactory fit. In other words, the same drawing limits, differently interpreted in terms of gaging practice, might lead to lack of interchangeability and bad fits.

The discussion also brought out the fact that it is common industrial practice to permit a gage to wear past the limit of the part to be checked by that gage. One company explained that its practice was to relate the amount of permissible wear to the drawing tolerance on the part; another company reported that it had adopted the practice of determining permissible gage wear not only on the basis of the tolerance on the part, but also in relation to the minimum clearance desired between the mating parts when assembled.

It was generally agreed that the practice of having each individual manufacturer determine the supplemental data for his own interpretation of dimensions on drawings results in discrepancies large enough to account for many of the difficulties that exist between various suppliers, subcontractors, and procurement agencies which have not, among themselves, agreed upon a single system of gaging inspection.

Close Drawing Tolerances Reduce Shop Tolerance

Further exploration of the common practices and the various systems that have been promulgated independently of one another revealed that the method of applying tolerances and wear allowances to gages has certain important effects upon the actual tolerances alloted to the machine shop. Gage tolerances and gage wear allowances which are kept within the tolerances alloted the parts on the drawings, for example, subtract directly from the tolerances available to the shop. Where drawing tolerances on the parts were extremely close, this raised the problem in the shop of producing parts with virtually no tolerance at all. In any case, this practice resulted in the unwarranted rejection of parts whose sizes actually were within the drawing limits, and added to the man-hours of labor and the cost of the parts. In one instance cited, the minimum tolerance on the part actually available to the shop was as little as 55 per cent of the drawing tolerance.

Discussers at the meeting pointed out that the problem was two-fold and consisted, first, in the lack of an acceptable and usable national standard for tolerances and allowances for cylindrical fits and, second, in the lack of a correlated national standard for gage tolerances and permissible gage wear which would permit the fits specified on the drawings to be maintained by everyone independently on the same uniform and practical basis.

Will Include Gage Specifications

It was generally agreed that something should be done to establish an acceptable system of cylindrical fits more complete than that given in the Tentative American Standard B4a-1925 and that this standard should be supplemented by gage specifications. Such a national standard would be immediately useful during the war, both as a basic reference for the design and production

Courtesy Pratt & Whitney

Checking Gage Accuracy

man alike, and as a practical tool to be applied concurrently with various routine changes in product design and tooling. It could also be used in new manufacturing projects that may be undertaken during the remainder of the war and could find industry-wide application after the war.

It was deemed that the pace of normal standardization work, requiring lengthy procedures to determine the national consensus, was too slow to achieve the necessary results during the war. The committee organized to revise B4a-1925 had been in existence since 1930.

Possibility of utilizing the War Standards Procedure of the American Standards Association was discussed with representatives of the Association who were present at the meeting. They explained that the War Production Board and the Association had evolved a procedure under which a small committee of industrial experts qualified in a given subject could be called upon to undertake a task of this nature. Working with technical staff assistance and necessary clerical help provided at the Association office, such an ASA War Committee could complete an assignment of this kind and submit an American War Standard for industrial approval in the shortest time possible.

After discussion of the manner in which such a wartime committee operated, it was agreed that the Automotive Council for War Production, as representative of more than 500 industrial concerns engaged in war production, should request the American Standards Association to make immediate use of their war emergency procedure to develop the required standard.

Expressing this agreement, a resolution was formulated and duly proposed and seconded, reading as follows:

WHEREAS, American industry has for the past ten years felt the need of revising and completing the Tentative American Standard, Tolerances, Allowances, and Gages for Metal Fits, B4a-1925, by a new American Standard that would unify industrial practices of specifying cylindrical fits and methods of gaging; and

WHEREAS, The need of such a standard has become more urgent than ever on account of the requirements of accuracy and interchangeability of parts arising from the war production effort, not only in individual companies, but also in relations between contractors and subcontractors and procurement agencies; therefore be it

Resolved, That the American Standards Association be requested to organize an ASA War Committee to complete the revision of the Tentative American Standard, Tolerances, Allowances and Gages for Metal Fits, B4a-1925, by developing an American War Standard comprising tolerances and allowances for cylindrical fits, as well as gagemaker's tolerances and permissible gage wear.

This resolution was put to a vote, and was unanimously carried.

The chair was instructed to compile the minutes of this meeting, circulate copies for corrections and approval, and then submit this request to the designated bodies through the Automotive Council for War Production.

War Requirements for Five Types of Safety Shoes

FOUR American War Standards outlining requirements for safety shoes for men, and one American War Standard covering safety shoes for women, are the first to be completed in a series of standards undertaken by the American Standards Association to provide essential footwear for the protection of workers in war production. The four standards for men's shoes have all been published in one document. They cover specifications for safety-toe shoes, conductive shoes, explosives-operations (non-sparking) shoes, electrical-hazards shoes, and foundry (molders) shoes.

The specifications for women's shoes, published separately, cover safety-toe oxfords.

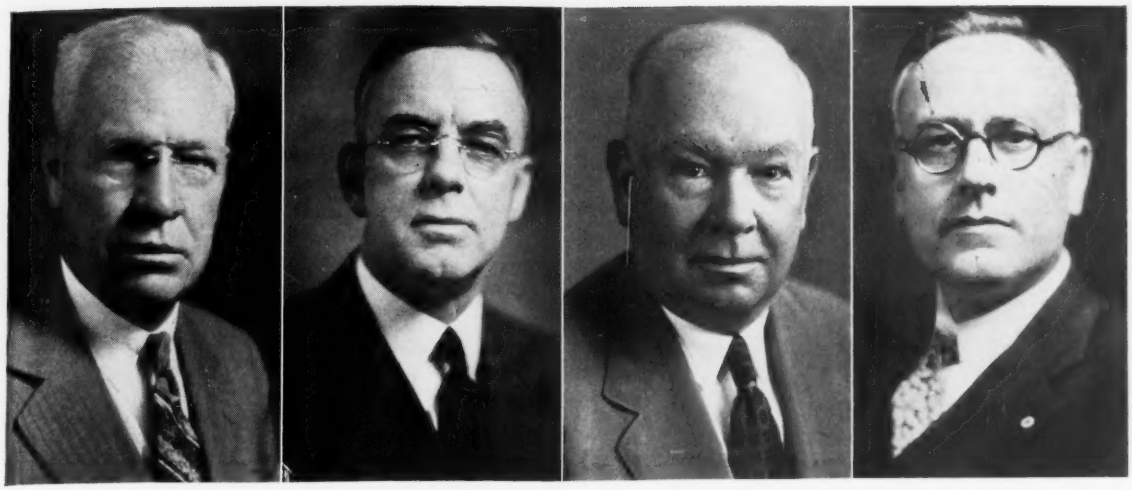
The specifications have been prepared with a view to conserving scarce materials and using substitute materials wherever possible. They also include currently recognized test methods and procedures rather than new or additional impact and bending tests. The outstanding aim is to provide workers with the protective occupational footwear needed to prevent lost-time accidents and at the same time to eliminate those types, varieties, and styles of safety shoes which are not vitally needed during the war emergency.

Specifications for additional types of women's safety shoes, including conductive shoes, welders' shoes, and explosives-operations (non-sparking) shoes, are being considered by the committee.

Copies of the American War Standard Specifications for Protective Occupational Footwear for Men (including standards Z41.1-1943, and standards Z41.3- through Z41.6-1943) are available from the American Standards Association at 40 cents for the volume. Copies of the American War Standard Specifications for Women's Safety-Toe (Oxford) Shoes (Z41.2-1943) are available at 25 cents per copy.

Fewer Butter Grades

As a means of simplifying the work of the Office of Price Administration in placing price ceilings on butter, the U. S. Department of Agriculture has reduced the number of grades of butter from nine to five. The official U. S. grades are now AA, equivalent to 93 score; A, 91 or 92 score; B, 90 or 91 score; C, 89 score; and "cooking grade" for anything below Grade C.



J. T. Barron | A. R. Small | C. A. Gill | R. G. Griswold

Four New Members on ASA Board of Directors

FOUR new members of the Board of Directors of the American Standards Association took office for three years, January 1, 1943. They are:

J. T. Barron, vice-president, Public Service Electric and Gas Company, Newark, New Jersey, nominated by the American Institute of Electrical Engineers

C. A. Gill, vice-president, Reading Company, Philadelphia, Pa., nominated by the Association of American Railroads

Robert G. Griswold, president, Electric Advisers, Inc., New York, nominated by the American Gas Association

Alvah Small, president, Underwriters' Laboratories, Inc., Chicago, Illinois, nominated by the National Safety Council

Robert E. Wilson, president, Pan American Petroleum and Transport Company, New York, who represents the American Petroleum Institute on the Board of Directors, was re-elected for another three-year term.

Jacob T. Barron was graduated from the University of South Carolina in 1905, and took a position in the testing department at the Schenectady Works of the General Electric Company. Two years later he joined the Public Service Electric and Gas Company of Newark, New Jersey, and has been connected with that organization ever since. During that time he has risen from the position of inspector of steam turbine installation in the Construction Department to the post he holds today, vice-president in charge of electric operation.

Charles A. Gill, vice-president in charge of operation and maintenance of Reading Company and the Central Railroad Company of New Jersey has had a long and varied career in the railroad field. Starting as a call boy with the Baltimore & Ohio Railroad in 1897, he subsequently served as a machinist apprentice, enginehouse foreman, master mechanic and superintendent of motive power with the same company. In 1931 there was a break in Mr. Gill's railroad service in this country as he was loaned by the Baltimore & Ohio Railroad to the Russian Government for the purpose of rehabilitating the motive power and railroad shops of that country. He proceeded to Russia and remained a year during which time he virtually reorganized the rail transportation of that country. In 1936 Mr. Gill became General Manager of Reading Company and the Central Railroad of New Jersey, and in 1941 he was elected to the position he holds today. Mr. Gill is a member of the New York Railroad Club and the American Society of Mechanical Engineers.

Robert G. Griswold has been connected with the ASA previously as a member of the Standards Council. After graduation from the University of Wisconsin in 1904 he became affiliated with the Denver Gas & Electric Company, Denver, Colorado. During his seven-year stay with this company he designed concrete purifiers for gas, and gas distribution systems, and also designed a district steam heating distribution system and

rates for central station district heating. In 1912 he joined the Henry L. Doherty Company of New York City, and three years later became Chief Technologist of that company. In 1936 he left the Doherty Company in order to assume a similar position with the Cities Service Company of New York. Two years later, in 1938, he became president of Electric Advisers, Inc., which serves the subsidiaries of the Cities Service Power and Light Company.

Mr. Griswold has been very active in standards work since 1920, having served as chairman and member of many ASA committees. He also is a member of the American Chemical Society, the American Gas Association, the American Petroleum Institute, the American Society of Mechanical Engineers, and the Franklin Institute.

Alvah Small, president of Underwriters' Laboratories, Inc., has been closely associated with ASA standards activities for many years. Not only has he served on the ASA Board of Directors, Standards Council, and Electrical Standards Committee, but he has been very active on many technical committees. Mr. Small graduated from the University of Maine, and joined the Laboratories' staff in 1906, after serving as an inspector for the New York Fire Insurance Exchange. He acted as vice-president of the Underwriters' Laboratories from 1916 until 1935 when he was elected president of the organization. Mr. Small is past president of the National Fire Protection Association, a member of the Advisory Engineering Council of the National Board of Fire Underwriters, and of the American Society for Testing Materials, the Building Officials Conference, the American Waterworks Association, the International Association of Electrical Engineers, and the International Association of Electrical Inspectors.

Other members of the Board of Directors of the American Standards Association are listed on the title page of this magazine.

Emergency Revisions Urged In Standards for Safety Devices

In order to promote the use of safety devices and equipment despite limitation orders on critical materials recently issued by the War Production Board, the Division of Labor Standards of the U. S. Department of Labor urges the development of war emergency revisions of standards and specifications to permit the use of less critical materials wherever possible. Several regulatory bodies have already permitted variaiton from technical code requirements to permit the use of wood and other substitutes in place of critical materials such as galvanized sheet iron, expanded metal, etc., the Division announces.

The importance of these safety standards is emphasized in the fact that the War Department, War Production Board, and the United States Department of Labor have all urged that every production worker be adequately safeguarded against accidental injury or health exposure as one means of assuring that the nation's manpower shall be used to the fullest extent.

In order to help in such a program, the manufacturers of safety equipment have agreed, through the War Production Board, to expansion of manufacturing facilities wherever possible, and to a program of substitution of materials which will help release critical materials needed for the manufacture of guns, planes, tanks, and other materials of war. In carrying out such a program, the need for emergency revisions of existing standards and specifications for safety equipment arises.

In addition to its call for emergency changes in standards, the Division of Labor Standards has issued a memorandum outlining the procedure which may be followed for obtaining priority ratings where these are needed in order to purchase safety equipment. The memorandum was sent to state labor departments and industrial commissions, to the National Committee for the Conservation of Manpower in War Industries, and to other accident prevention agencies. Copies are avilable from the Division of Labor Standards, U. S. Department of Labor, Washington, D. C.

Rivets Standards Revised

Addenda to two American Standards for rivets, approved by the American Standards Association recently, eliminate requirements for a Cold Test for Ductility, and provide a revision of the Hardness Test. In the revised Hardness Test, rivets must show a maximum Rockwell hardness number of B60 as measured on the side of the shank of the rivet.

The revisions apply to the American Standard for Tinners', Coopers', and Belt Rivets (B18g-1929) and to the American Standard for Small Rivets, 7/16 Inch Nominal Diameter and Under (B18a-1927). They have been printed as addenda which have been inserted as loose sheets in the copies of the old standards.

Copies of each standard, including its Addendum may be obtained from the American Standards Association at 35 cents per copy.

"War Model" Standards Assure Replacement Parts for Home Radios

Are Expected to Be Used As Basis for OPA Price Regulations

THE first three standards of a series to provide "War Model" replacement parts to keep home radio sets running in spite of wartime shortages have just been completed by the American Standards Association. Production of parts to these new standards will, it is expected, be scheduled by manufacturers to start in April and will enable owners of radios to keep their sets in repair for the duration regardless of the firm which made them or the year in which they were made. The parts are expected to be covered by price ceilings, which, with the performance requirements written into the standards, will assure the radio owner of continuing quality at a fair price.

Work on this series of civilian radio War Standards is being done by a War Standards Committee set up by the American Standards Association at the request of the Office of Price Administration after consultation with the War Production Board. It is planned that the committee's program will include a simplified line of parts sufficient to service an estimated 90 per cent of modern home receivers in use today.

The reduction in the variety of radio parts due to the new standards will not only increase production, Frank H. McIntosh, chief of the WPB Domestic and Foreign Radio Section declares, but will also make things easier for dealers who were formerly forced to hold large inventories comprising many slow lines in order to satisfy all customers.

The first standards completed include a simplified list of the most critical replacement parts at present—capacitors (condensers), volume controls, power and audio transformers and reactors (chokes), and performance and constructional standards for both electrolytic and paper capacitors (condensers).

Number of Parts Radically Reduced

The list of replacement parts which is deemed adequate for servicing the great majority of home receivers shows a radical reduction from the thousands of different types of each item available in the "Pre-Pearl Harbor" replacement parts field.

Courtesy Radio Retailing Today

War Standards will give civilian radio owners a simplified line of replacement parts

For example, the nine types of electrolytic capacitors in the new standard list will replace the 350 formerly manufactured. The standards also reduce the number of paper capacitors to nine, volume controls to 11, power transformers to six, chokes and interstage audio transformers to two, output audio transformers to three, and the driver audio transformer to one.

The performance and design standards for capacitors provide for tubular cardboard-encased units using the minimum of strategic materials. The required minimum performance characteristics have been chosen to be satisfactory from an electrical and service life standpoint, and so that there will be no need, it is hoped, for replacing replacement parts.

These standards provide for new "War Model" part numbers and a special symbol consisting of a V with the Morse Code "V"—three dots and a dash — enclosed in a circle to appear on all parts

The three new American War Standards for replacement parts for civilian radio have been published by the American Standards Association and are now available. Titles of the standards are:

Fixed Paper-Dielectric Capacitors (Home Receiver Replacement Type) C16.6-1943
Dry Electrolytic Capacitors (Home Receiver Replacement Type) C16.7-1943
Simplified List of Home Radio Replacement Parts (Paper and Electrolytic Capacitors, Volume Controls, Power and Audio Transformers and Reactors) C16.8-1943

Copies may be obtained from the American Standards Association at 20 cents each.

made in accordance with them. Likewise, it is expected that a manufacturer's identification symbol assigned by the WPB will appear on all parts so that responsibility for the quality of unbranded and private brand parts can be definitely ascribed to the original manufacturer.

The ASA War Committee on Replacement Parts for Civilian Radio has in these new standards reconciled the oft-times divergent viewpoints of the various branches of the radio industry including parts manufacturers, receiver manufacturers, service organizations, parts distributors, and design laboratories, while defining a severely limited line of replacement parts.

A performance standard for power and audio transformers and reactors is now out to letter ballet of the War Committee on Replacement Parts for Civilian Radio. This will be incorporated in the government orders when issued, it is understood.

The ASA committee is composed of independent experts in the radio industry, with Dr. O. H. Caldwell, Editor of *Radio Today*, chairman, and John Borst, Chief Engineer, John F. Rider organization, vice-chairman. In all its work the radio committee has been in close touch with E. A. Graham, Standards Division of the Office of Price Administration, and F. H. McIntosh, Radio and Rader Branch, War Production Board. Other members of the Committee are: M. M. Brandon of Underwriters' Laboratories, Inc.; Garrard Mountjoy, RCA License Laboratory; M. J. Schinke (Stewart-Warner Corporation) chairman of Service Committee, Radio Manufacturers Association (P. R. Butler, General Electric Company, *alternate*); George F. DuVal, past president, Radio Servicemen of America (A. E. Rhine, *alternate*); S. L. Chertok, ASA staff, secretary. Government liaison men on the committee include Frank H. McIntosh, Chief of the Domestic and Foreign Radio Section of the WPB (Samuel Weisbroth, *alternate*); Karl S. Geiges, Simplification Branch, WPB; and Earl A. Graham, Chief, Consumer Durable Goods Section, Standards Division, OPA.

Steel Castings Specifications Approved by ASA

Recent approval by the American Standards Association as American Standard of three ASTM specifications for steel castings brings added recognition to the extensive ASTM program in this field. The three standards are:

Specifications for Carbon-Steel Castings for Miscellaneous Industrial Uses (ASTM A27-42) American Standard G50.1-1943
Specifications for Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses (ASTM A215-41) American Standard G51.1-1943
Specifications for Alloy-Steel Castings for Structural Purposes (ASTM A148-42) American Standard G52.1-1943

In this field the Society has one other standard, Specifications for Carbon-Steel Castings for Fusion Welding for Service up to 850 F (ASTM A216-41T). This may be submitted to the ASA whenever it is advanced to standard in the Society.

These three new American Standards supplement previous ASTM submittals which have led to ASA approval of more than 60 standards—specifications and methods of test—in the field of ferrous materials. These standards serve a large variety of structural and industrial uses and are the basis, with other emergency alternate provisions, for practically all steel castings now being produced in the United States.

ASTM Zinc Standards Receive ASA Approval

The American Standards Association has recently approved two standards for zinc which were sponsored by the American Society for Testing Materials. These are:

Spefications for Slab Zinc (Spelter) (ASTM B6-42) American Standard H24.1-1943
Specifications for Rolled Zinc (ASTM B69-42) American Standard H25.1-1943

These two specifications and other earlier editions have covered practically all of the American transactions for slab and rolled zinc and also exerted in former years a marked effect upon the export and import trade of this highly strategic non-ferrous metal.

Safe Limits on Mercury and Chromates in Air Work Places

Protection of workers against disease and accident keeps war production moving

by Paul A. Neal[1]
and F. H. Goldman

IN line with our efforts to keep every war worker healthy and safe while on the job, the American Standards Association has just released new American Standards which set an upper limit to the concentration of chromic acid and chromates, and of mercury, in the air of work places. By keeping the concentration of these poisonous compounds below this safe upper limit, use of the new standards should insure freedom from harmful effects to the workers exposed to chromic acid and chromate vapors and to mercury.

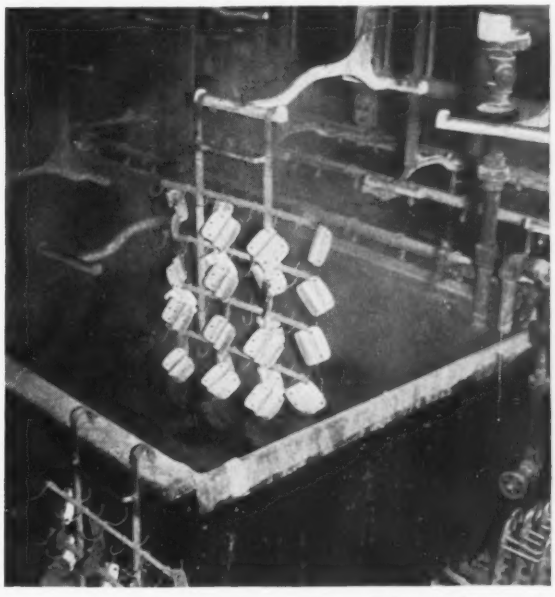
It is fortunate that these safe practice standards may be met without undue engineering difficulties. In the case of chromium, for instance, air sampling for control purposes involves a subsequent chemical analysis; however, this is a simple and quick procedure. In the case of mercury vapors we are more fortunate inasmuch as there are instruments available which record mercury concentrations directly and continuously, if necessary.

The new standards are particularly important at the present time in the case of mercury. The demand for mercury in the manufacture of munitions is now so great that every possible source in the United States is being explored, and mines which a short time ago were not worked because of the low grade of ore are now being worked on a 24-hour schedule.

Mercury High as Cause of Poisoning

Mercury has ranked high among the causes of poisoning for several hundred years. Poisoning from mercury may occur from inhalation of mercury vapor or dust, from oral ingestion, from absorption through the unbroken skin, from absorption from wounds and mucous surfaces, and from subcutaneous and intravenous injection. Many people think of poisoning from this element as being an acute condition due to the use of mercury compounds such as bichloride of mercury in cases of suicide. In industry, however, mercury poisoning occurs almost entirely from the inhalation of mercury vapors and is practically never acute but of a chronic nature characterized by fine intention tremor of the hands and fingers, psychic irritability, and pronounced vasomotor changes such as abnormal blushing and excessive perspiration. The diagnosis of chronic mercury poisoning in its early stages is difficult and can only be made by a competent physician.

Mercury is used in the preparation of amalgams and chemicals, in the manufacture of scientific instruments, and in the electrical and explosives industries. It is also used in mercury engines, mercury vapors being utilized to supply



U. S. Public Health Service

For chromium plating, parts are automatically dipped into baths such as the one shown in this inside view of a glass-enclosed continuous-plating process. The dangerous chromic acid fumes and steam rising from the bath are shown here. Exhaust fans carry these fumes outside, but some of the fumes may remain in the workroom.

[1] Dr. Neal is Surgeon and Dr. Goldman is Senior Chemist of the Division of Industrial Hygiene, National Institute of Health, U. S. Public Health Service.

Allowable concentration in the air of work places has been determined and approved by the American Standards Association for six other toxic substances in addition to the chromates and mercury just issued. The six additional standards are:

Allowable Concentration of Carbon Monoxide (Z37.1-1941)
Allowable Concentration of Hydrogen Sulfide (Z37.2-1941)
Allowable Concentration of Carbon Disulfide (Z37.3-1941)
Allowable Concentration of Benzene (Z37.4-1941)
Allowable Concentration of Cadmium, American War Standard (Z37.5-1941)
Allowable Concentration of Manganese, American War Standard (Z37.6-1942)

These six standards, as well as the two new American Standards, Allowable Concentration of Chromic Acid and Chromates (Z37.7-1943) and Allowable Concentration of Mercury (Z37.8-1943), were prepared by a representative sectional committee of the American Standards Association. The U.S. Public Health Service cooperated in the development of the last two standards by preparing the initial draft and subsequent revisions. The Service also acted as Endorsing Sponsor.

Copies of all eight allowable concentration standards are available from the American Standards Association at 20 cents per copy for each standard.

the driving power. As pointed out above, the demand for mercury in the manufacture of munitions is so great at the present time that every possible source of mercury in the United States is being explored, and even mines producing only low grade ore are now being worked on a 24-hour schedule.

Simple Procedure for Sampling

As set up, the standard applies only to mercury vapor. It sets the maximal allowable concentration of mercury at one milligram per 10 cubic meters of air for exposures not exceeding a total of eight hours daily. The procedure for sampling the atmosphere for mercury is rather simple. The Nordlander instrument or Woodson's detector may be used. The former method is based on the intensity of the stain obtained when mercury vapor is passed over selenium sulfide paper. The latter is based on the selective absorption of ultraviolet at 2537A by mercury vapor.

The extreme sensitivity of the ultraviolet absorption method may be illustrated by the following experiment. If one touches a drop of mercury or rubs his finger over a wooden table top where mercury has been handled, and then holds his finger near the instrument there is a sharp swing of the needle on the scale showing the presence of even this minute amount of mercury.

Vapor Pressure Low but Deadly

The vapor pressure of mercury at room temperature is only 0.002 mm. At first sight this may appear quite low but actually if we were to allow the room air to reach saturation at this pressure it would amount to 215 mg of mercury in 10 cubic meters. No person could enter such an atmosphere with impunity. It is well, therefore, that thought be given to the dangers of mercury poisoning, wherever this element is encountered.

Chromium compounds are used extensively in the tanning industry, in photography, in dyeing, and, of course, in chromium plating. Practically all chromium plating baths have chromic acid as the principal constituent. During plating, oxygen is evolved at the anodes and hydrogen at the cathodes. The liberation of these gases tends to carry a fine mist of the liquid present in the tank into the surrounding air.

Chromates Produce Ulcers

Injury from chromates generally occurs in the form of ulcers, with particular injury to the nasal tissues. Chromates may also cause kidney and liver damage.

The standard provides for a maximum allowable concentration of chromium as chromate or dichromate dust, or as chromic acid mist of one milligram of chromic acid anhydride (CrO_3) in 10 cubic meters of air, for exposures not exceeding a total of eight hours daily.

It should be noted that this standard applies only to hexavalent compounds of chromium. The trivalent compounds are not directly toxic nor is their toxicity of the same order of magnitude.

Of the chromates only compounds such as the alkali and alkaline earths, and the acid anhydride are included. Compounds such as lead or zinc chromate constitute specific problems peculiar to themselves and are not included in this standard.

These two new standards are part of a series, of which six others setting maximal allowable concentrations of toxic dusts and gases have been approved by the American Standards Association. They cover the concentration in the air of work places of carbon monoxide, hydrogen sulfide, carbon disulfide, benzene, cadmium, and manganese. Proper physical examinations, together with adequate factory safeguards as set up by these standards, will protect the workers in industries using these materials, and will prevent the loss of man hours in this time of our greatest war effort.

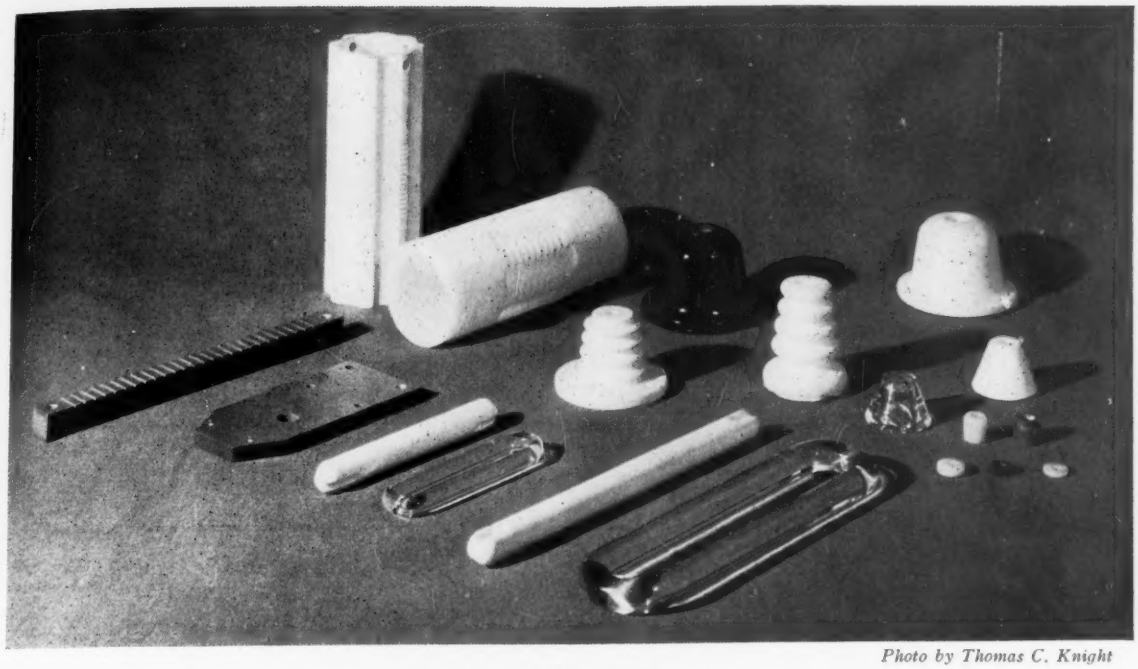


Photo by Thomas C. Knight

Examples of Class L Ceramics

These insulators and insulating pieces show the use of the four materials (steatite, porcelain, glass, and glass-bonded mica) covered in the new War Standard. As shown above, similar insulators and insulating pieces are produced in several different materials. Thus, if supplies of one material run low, production of interchangeable parts in another material is assured.

War Standards for Ceramic Materials For Radio Insulators

by Alfred N. Goldsmith

Chairman, Subcommittee on Insulating-Material Specifications for the Military Services of the ASA War Standards Committee on Military Radio.

AN interesting and constructive task was completed recently when specifications were prepared for ceramic materials intended to be used primarily as insulators in radio and other communication equipment by the Armed Forces.

As has been previously described to readers of INDUSTRIAL STANDARDIZATION (September, 1942, p. 213) the War Committee on Radio was formed in 1942. This committee was sponsored by the War Production Board, and its chairman is S. K. Wolf, Chief of the Radio and Radar Section of the WPB. The secretariat of the War Committee on Radio, including its subcommittees, and all the drafting or task groups of all the subcommittees, is handled by the American Standards Association by contractual arrangements with the WPB.

The extensive realm of insulating materials is handled by the Subcommittee on Insulating-Material Specifications for the Military Services, under the chairmanship of Dr. Alfred N. Goldsmith who represents the Institute of Radio Engineers on the War Committee on Radio. Reporting to the Subcommittee on Insulating-Material Specifications for the Military Services are a number of drafting groups. Drafting Group 1 on "Material Specifications of Ceramic Insulators," under the chairmanship of Dr. Carl J. Christensen of the Bell Telephone Laboratories, has handled the various problems involved in that field.

By "material specifications" are meant the description of the physical and chemical significant characteristics of materials, the methods of test of such characteristics, and related questions of good practice in the utilization of the materials. The procedure involves careful study of each material to determine which of its characteristics are

truly significant in relation to the end product in which the material is used and the method or condition of its use. Considerable exploratory work and numerous investigations are thus required before material specifications can be set up. This was found particularly to be the case for ceramic insulating materials since these occur in widely diverse types having, in some instances, markedly different characteristics and uses. The main ceramic materials which were under consideration included steatite, porcelain, glass, and glass-bonded mica.

The following members and consultants of Drafting Group No. 1 on Material Specifications of Ceramics for Radio Insulators, of the Subcommittee on Insulating-Material Specifications for the Military Services, prepared the new American War Standard:

Carl J. Christensen, *Bell Telephone Laboratories*, Chairman
Capt. Frank P. Anderson, *U. S. Army, Headquarters, Services of Supply Production Division*
George J. Bair, *Corning Glass Works*
R. S. Baldwin, *Navy Dept. Bureau of Ships* (Robert B. McDowell, *Alternate*)
Fred Bickford, *Corning Glass Works*
R. S. Bicknell, *American Lava Corporation*
Kristian H. Brandt, *Fort Monmouth Signal Laboratory* (S. DiVita, *Alternate*)
T. R. Bunting, *Aircraft Radio Laboratory*
Charles E. Butler, *Camp Evans Signal Laboratory*
L. J. Cavanaugh, *General Electric Company*
Major R. F. Cunningham, *U. S. Army, Signal Corps, Aircraft Radio Laboratory* (Harold Miller, *Alternate*)
H. L. Curtis, *National Bureau of Standards*
G. M. Ehlers, *Centralab, Division of Globe Union, Inc.*
R. F. Field, *General Radio Company*
R. F. Geller, *National Bureau of Standards*
F. P. Hall, *Pass & Seymour, Inc.*
J. D. Heibel, *Erie Resistor Corporation*
A. M. Hossenlopp, *H. L. Crowley & Company*
Lt. Glenn N. Howatt, *General Ceramics & Steatite Corporation*
Herbert S. Lyon, *Camp Evans Signal Laboratory* (Trevor M. Caven, *Alternate*)
George L. McCreery, *Ohio Brass Company* (P. M. Ross, *Alternate*)
Francis X. Maida, *Erie Resistor Corporation*
J. E. Martin, *Naval Research Laboratory*
Robert W. Orr, *RCA Manufacturing Company*
F. Potter, *Isolantite, Inc.*
H. H. Race, *General Electric Research Laboratory*
Lt. Comdr. J. W. Ryssy, *U. S. Coast Guard*
Hans Thurnauer, *American Lava Corporation*
Lt. J. B. Tucker, *H. L. Crowley & Company*
Eugene Wainer, *Titanium Alloy Manufacturing Company* (K. B. Thews, *Alternate*)
J. S. White, *Stupakoff Ceramic & Manufacturing Company*
W. A. Yager, *Bell Telephone Laboratories*

Copies of the standard, Ceramic Radio Insulating Materials, Class L, are available from the American Standards Association at 20 cents each.

Specifications Cover Performance

At its inception, the work of Drafting Group 1 was limited to a consideration of steatite and steatitic materials. It was soon found expedient and practical to extend the work to cover the various classes of ceramics mentioned above. The specifications were not drawn to cover the composition of the material but rather its performance. From the viewpoint of the Armed Services, the behavior of the material under combat conditions is the all-important factor, whereas the nature of the material is relatively or entirely unimportant provided it fully meets the basic performance specifications.

Drafting Group 1 decided to concentrate its work, as a first step, on ceramic materials of low dielectric constant and used principally for insulators, since these constitute the group most extensively used at the present time. On February 26, 1943 Ceramic Radio Insulating Materials, Class L (C75.1-1943) was approved as American War Standard. This will be followed as promptly as possible by corresponding specifications for ceramic materials intended primarily for use as dielectrics in capacitors.

It is appropriate to contrast the work of Drafting Group 1 with that of its somewhat related Drafting Groups 2 through 5. These latter Drafting Groups deal with *product* specifications of insulators made of individual or specific materials (respectively steatite, poreclain, glass, and glass-bonded mica).

Include Preferred Shapes

Product specifications differ fundamentally from material specifications—a fact which is sometimes neglected in standardization work and which may lead to a certain amount of confusion in practice.

Material specifications have been sufficiently described above.

Product specifications, by contrast, include the preferred forms or shapes in which a given material may be used, together with the dimensions and tolerances of such products or shapes. The product specifications also include the criteria of good engineering design for the given material and shapes. Methods of test are included where necessary; and the nature of the use of the particular shapes is indicated.

The shapes which are selected are of such types that substitution of one relatively plentiful material for another relatively scarce material can be carried out with a minimum dislocation of production of the finished assemblies whenever necessary. Wherever possible, improvements in the quality of the products are considered in product specifications. And simplification is introduced to the maximum extent, inasmuch as the

minimum necessary number of shapes of any given type or group are included, thus avoiding minute or meaningless changes in dimensions from one shape to the next of the same general type. To meet all of the preceding conditions requires careful planning and laborious detailed work.

Work Has Close Relationship

It is clear that, while the material specifications prepared by Drafting Group 1 differ fundamentally from the product specifications prepared by Drafting Groups 2 through 5, there is nevertheless a close relationship between the work of the five groups. As a matter of fact, the minutes, reports, and recommendations of each group have been systematically circulated among all other groups for their information and possible guidance, and this procedure has proven particularly helpful at times. Interchange of samples of products between groups has also been instructive.

In the work of Drafting Group 1 many normally anticipated obstacles were encountered. Fortunately, none of them proved insuperable. Terminology, the selection of appropriate significant characteristics of physical and chemical nature, the appropriate selection of ranges of values of a given characteristic for each grade of the material, standard definitions of materials and procedures, and the like, all require attention by the Drafting Group. The specifications were finally prepared in the required Federal-specification form. This is an orderly and comprehensive form which nevertheless requires careful attention to detail in its preparation.

The preparation of the specifications on ceramic materials for insulation, prepared by Drafting Group 1, was greatly facilitated by material placed before the Group by representatives of the Armed Services and by the painstaking and conscientious work done by the representatives of the Army and Navy, of the insulating material manufacturers, and of the radio equipment manufacturers.

The work of Drafting Group 1 continues to go forward in the direction of material specifications for ceramic materials for use as dielectrics in capacities as well as for other appropriate and timely subjects within its scope of work.

NEMA Plays Leading Role In Gas Cylinder Project

The National Electrical Manufacturers Association played a leading role in bringing the approval of the American Standard Method for Marking Compressed Gas Cylinders to Identify Content to a successful conclusion. Approval of this standard was announced in the February issue of INDUSTRIAL STANDARDIZATION but the outline of the history of the project failed to mention the important part taken by NEMA. It was through the interest and by request of NEMA that the project was undertaken by the ASA in 1940, and a conference of all those concerned was held. An earlier request for a project in 1925 had been received from the Industrial Accident Commission of California but lack of agreement on the part of the organizations concerned had made it impossible for the ASA to initiate the project at that time. The NEMA request for the project made it possible for the ASA to start work on the proposed standard. It was approved late in 1942.

Erratum

It has just been called to our attention that the new American Standard Method of Marking Compressed Gas Cylinders to Identify Content refers to the National Bureau of Standards *Safe* Practices Recommendation R 176-41, Color Marking for Anaesthetic Gas Cylinders. This reference, unfortunately, is in error. The document mentioned is the National Bureau of Standards *Simplified Practice* Recommendation R 176-41, Color Marking for Anaesthetic Gas Cylinders.

War Training Course Includes Use of Industrial Standards

Use of industrial standards in war industries will be the subject of a war-training course offered by the College of the City of New York under a program administered by the United States Office of Education.

The course will discuss standards in general, job standardization, standardization of materials, tolerances and finishes, simplification of design, standardization with respect to size and number, use of information already available, and safety standards. It will be given two nights a week for eight weeks, a total of 48 class hours.

Plans for the course were reviewed by Dr. P. G. Agnew, secretary of the American Standards Association.

Heroes on the Production Front

"Unsung heroes on our production battlefront are those who set standards. Indeed, a large share of credit for the swift conversion from peacetime to war production is due them."

—Corrie Cloyes, "Standardization Comes Into Its Own," *Domestic Commerce*, September 24, 1942.

How States and Local Units Use Uniform Weights and Measures

How far state and local weights and measures laws are in agreement with the model law recommended by the National Conference on Weights and Measures is the subject of a report just issued by the Consumers' Counsel Division of the U. S. Department of Agriculture. The report is based on a survey carried out by the Division with the assistance of a Work Projects Administration Official Project, and with the cooperation of the National Conference.

The model-law provision requiring that all commercial weighing and measuring devices be tested at least twice a year is in effect in more than one-fourth of the States, one-half of the cities, and two-thirds of the counties covered by the questionnaire, the survey showed. In most of the remainder, inspections are required at least once a year. Usually, too, there are regulations providing that new weighing and measuring equipment be tested before being used, and approved equipment sealed or stamped.

Nearly all the weights and measures laws require that all packages be plainly and conspicuously labeled with their net contents, and prohibit misleading wrappings or packagings.

Surprisingly, the survey showed inconsistency in the legal units of weight or measure for the principal commodities. The greatest degree of uniformity was found in the units for milk or cream (½ gallon, 3 pints, 1 quart, 1 pint, ½ pint, and 1 gill). For butter or oleomargarine, ¼ pound, ½ pound, 1 pound, 1½ pounds, or multiples of 1 pound were likewise quite general. Wood was ordinarily sold by the cord of 128 cubic feet (according to the model law), although occasionally some other cord was used, or it was sold by weight. For coal, charcoal, or coke, the recommended ton of 2,000 pounds predominated.

In the case of bread, however, less than one-half of the communities exactly followed the units recommended in the model law, which specifies loaves of ½ pound, 1 pound, 1½ pounds, or multiples of 1 pound. Very little uniformity was found in the units reported for flour, grain, potatoes, celery, lettuce, maple syrup, honey, ice cream, vinegar, alcoholic liquors, salt, poultry, lime, or petroleum products.

The survey showed that most of the cities and counties required that standard weights and measures must be proved by State standards at least once in five years.

The model state law on weights and measures, on which this survey is based, is recognized as the most satisfactory basis for developing local or State regulations in the field of weights and measures, and has been recommended by both the National Conference on Weights and Measures and the National Bureau of Standards.

Copies of the report, *Inspection and Control of Weights and Measures in the United States*, prepared by George W. Hervey and Reign S. Hadsell, may be obtained from the Superintendent of Documents, Washington, D. C., at 15 cents each.

OCD Supplies Adapters For Standard Hose Threads

Supplemental fire-fighting equipment for use in air raids and equipped with hose with American (National) Standard 4½-inch couplings are now being distributed by the Office of Civilian Defense to supplement municipal fire-fighting equipment in many parts of the country. This hose will fit only those hydrants with American Standard 4½-inch outlets.

In order that the hose can be connected to American (National) Standard 2½-inch couplings, however, the OCD Fire Defense Advisory Committee has approved an adapter coupling for distribution with the auxiliary equipment. Since the pumps were completed by the manufacturers before all the equipment was assembled, however, the OCD decided to release the pumps to the communities where they are to be used without waiting for the adapters and tools. The apparatus can be used to take suction at draft pending the delivery of the adapters, it is explained.

In cities where hydrants do not have either 2½-inch or 4½-inch American Standard outlets other adapters will be needed. These additional adapters will not be furnished by OCD, but will have to be made or secured locally if not already available. If the necessary adapters cannot be bought or made, the National Fire Protection Association declares, suction can be taken from a tub placed under an open hydrant butt, or from a suction basin improvised from a tarpaulin.

Draft Standards to Protect Workers on Synthetic Rubber

A working subcommittee has been appointed by the ASA Committee on Allowable Concentrations of Toxic Dusts and Gases to prepare draft standards for safe concentration of acrylonitrile and styrene in the air of work places. Both these substances are used in connection with the synthetic rubber program. Dr. P. A. Neal, U. S. Public Health Service and Dr. Donald Irish, Dow Chemical Company, have been asked to serve as the subcommittee to draft the proposed standards.

New Baking Tests, Less Heat Loss For Gas Ranges

by R. M. Conner[1]

Director, Testing Laboratories
American Gas Association

Post-war gas ranges and space heaters must meet revised approval requirements to qualify for AGA Seal of Approval; new standard requirements are approved for gas-fired duct furnaces.

THE standardization program initiated by the American Gas Association many years ago and carried forward under the procedure of the American Standards Association has long been enviously regarded by competing industries. From a modest beginning it has now grown to cover all types of domestic gas-burning appliances, some of them commercial, and numerous types of gas-appliance accessories.

Not content with continuing to use standards for an indefinite period in the form originally issued, a policy of periodic revision and extension has been constantly followed. Such a course has been particularly necessary within the past few years due to the many changes which have occurred during this period. New methods of construction, application of different materials, and numerous refinements of design have been developed. All of these have emphasized the need for continuous study and research to insure that new ideas and methods are suitably reflected in the standards by which gas appliances are tested and approval granted to those meeting the standard provisions. The wide acceptance of these approved appliances is evidenced by the fact that 95 per cent of all domestic gas-burning equipment now offered for sale displays the trade-marked Laboratories' Seal of Approval of the American Gas Association as evidence of compliance with American Standards prepared and sponsored by the industry.

New Standard on Duct Furnaces

In addition to the more than 30 sets of standards already available, two revised standards covering domestic gas ranges and gas space heaters, and an entirely new set devoted to gas-fired duct furnaces, have recently been completed under American Gas Association sponsorship and have been adopted by the American Standards Association as American Standard.

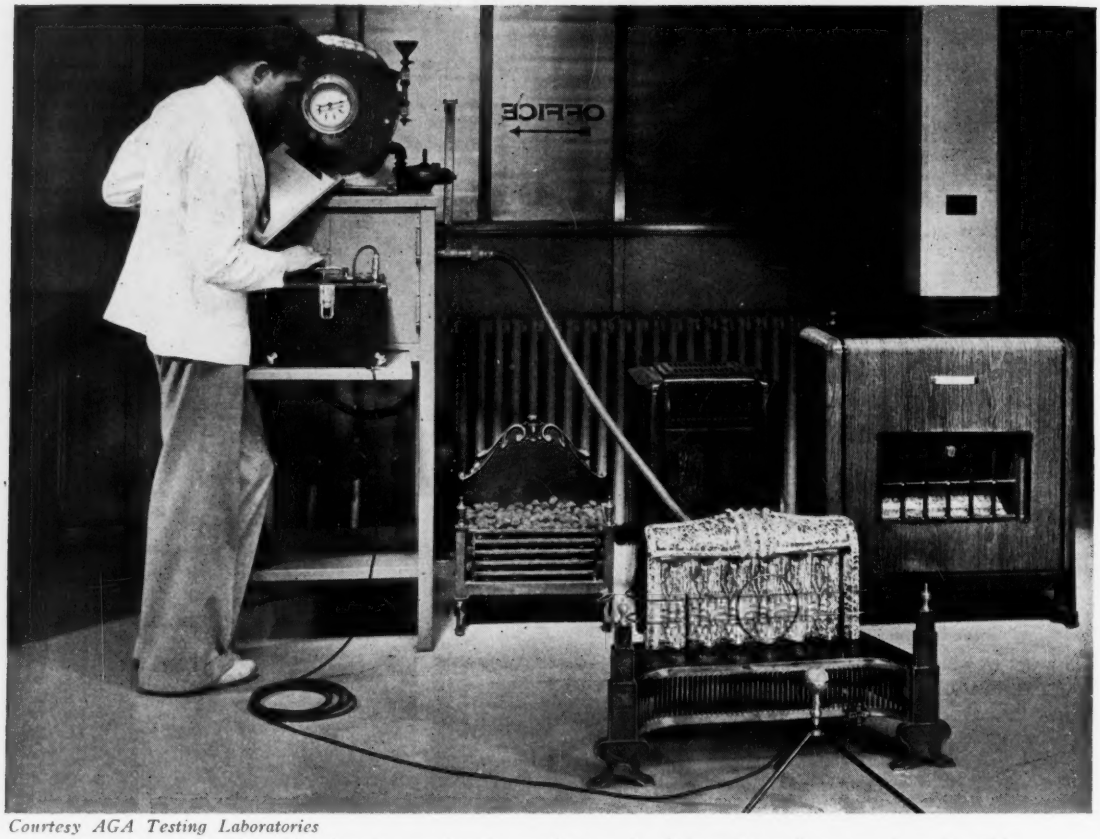
The present range standards represent the tenth, and the space heater standards the eighth edition. When it is considered that the range standards were issued initially in 1926 and that they have been revised nine times since, the thoroughness of the policy which has been followed in their periodic extension and strengthening will be readily evident.

The revised gas-range standards embody a number of features covering both construction and performance which are far more extensive than anything heretofore available. Numerous changes in construction have been made to provide greater accessibility for purposes of adjustment, replacement, and servicing. These relate specifically to gas orifices, burner valves, lighters, and similar parts. Ready access to all such accessories is now a matter of major importance, particularly in the case of ranges designed for installation in limited space and to fit flush against rear and side walls. Growing use of electric ignition on ranges of the automatic type has made it necessary to include provisions covering high-tension electrical equipment. They have been included in the section devoted to electrical equipment and are in full conformity with corresponding features of the latest edition of the National Electrical Code. Among other new provisions are those relating to attachment of burner valve handles, number and position of oven rack supports, instructions for oven lighting where automatic ignition is not employed, and many others.

Provisions Affect Consumers

The revision in requirements affecting performance are of particular interest to consumers. Chief among these is an entirely new baking test by which uniformity of browning can be accurately and scientifically evaluated by use of especially designed equipment. In addition to requiring

[1] Secretary, ASA Sectional Committee on Gas-Burning Appliances.



Courtesy AGA Testing Laboratories

An American Standard noise meter is used here in determining how much noise this space heater makes.

browning of cookies within closely specified limits, a second test has been added by which both tops and bottoms of layer cakes are required to be uniformly baked. Special recipes have been included for both cookies and cakes and detailed procedures specified for their baking. They were adopted after extensive research and consultation between Home Service Directors and government bureaus, resulting in full agreement.

In addition to the more effective performance provided by the extensively revised baking test, allowable surface temperature limits for exposed parts have been materially lowered, thus insuring cooler kitchens. The requirements have also been extended to include separate broiling ovens. Provision has been made for limiting maximum temperatures on glass door panels when used. Broiling of suitably prepared meat cakes has now been specified to determine that there will be no interruption of the broiling operation due to extinguishing of the burner or pilot, or to shut-off of the gas by the automatic pilot controlling the supply.

In the new space-heater standards, the principal revisions relate to performance features. Nevertheless, those involving construction have been materially extended and a number of additional details added. Compliance with latest American Standards covering accessories, such as thermostats, safety pilots, draft hoods, burner cocks, and similar features, has been specified throughout. An important addition has been made applying to heaters for use with liquefied petroleum gas when equipped with automatic controls or with ignition means. In all such instances, an automatic pilot capable of shutting off the gas supply both to the main burners and to the pilot is now required. Special attention has been devoted to heaters of the recessed wall type, now frequently encountered. When supplied on space heaters, draft hoods must be of such design that flue gases cannot be discharged into walls or floors from the draft hood relief opening. Provision is also made for minimum thickness of sheet-metal parts of recessed wall models.

A novel addition has been made to the performance features by which various operating noises are limited to specified intensities. These are measured in decibels by the use of a sound-level meter placed at a distance of 18 inches from the heater. Permissible limits range from 55 decibels for normal operation to 70 decibels for immediate ignition or extinction. The significance of these noise levels may be better understood when it is considered that 50 decibels correspond to the noise level of an average office, 60 that of normal conversation, while 75 would represent that resulting from operation of a typewriter.

Under the new standards it is possible to measure accurately the noise level reached in each instance and determine whether it is within the limit permitted. While excessive noise was previously prohibited, no level by which it could be evaluated was available.

Among additional new provisions in the space-heater standards may be listed a limitation of surface temperature of valve handles, increase in intensity of down drafts employed to determine effectiveness of draft diverters, special wall temperature tests applied to circulating heaters of the recessed type, and means for determining durability of refractory radiants. Additions have also been made to the test procedure formerly specified for determining ratings of gas-fired radiators to cover more comprehensively those of the vented type.

For several years past the use, for heating purposes, of furnaces installed in distribution ducts of air-conditioning systems has been increasing. The desirability of standards to cover such applications was first considered in 1938. By the following year the necessity of such standards became evident and steps were taken in their preparation. Following the plan customarily employed in such cases, a subcommittee was organized consisting of an equal number of representatives of utility companies and manufacturers, all of whom were closely associated with the application of duct heaters. While it was found possible to utilize to a considerable extent existing standards for gas warm-air furnaces, numerous points of difference were recognized for which individual coverage was required. For this reason the standards now available contain a number of distinctive features which are discussed below.

Strength and Durability Important

Adequate strength, rigidity, durability, and resistance to corrosion are features possessing particular importance in the construction of a duct furnace. For this reason minimum weights of metal for heating surfaces and casings are considerably heavier than required for warm-air furnaces. The heating surface is, of course, of prime importance. Therefore it is specified that where sheet metal is used in its construction its thickness shall be such as to insure strength, rigidity, durability, resistance to corrosion, and other physical properties, equivalent to No. 16 U.S. Standard gage black sheet iron. This compares to No. 20 gage for warm-air furnaces. Similarly, casings for confining circulating air when of sheet metal must not be less than No. 20 U.S. Standard gage as compared with a minimum of No. 24 gage for warm-air furnaces. Accessibility for cleaning and inspection is likewise a most important detail. It is accordingly required that flue gas passageways must be capable of ready accessibility without major dismantling of the unit. Installation of such furnaces in air-conditioning ducts makes the feature of dismantling of special significance. It is, however, recognized that removal of burners, flue pipe, and draft hood are relatively simple operations and, therefore, they are not considered as constituting major dismantling.

Data on Name Plate Required

As duct furnaces may be required to operate under different conditions of air throughput rather than under one fixed condition, it is required that both the maximum and minimum air throughputs for which the furnace is designed must be shown on a permanent name plate. Instructions for normal lighting and shutting off of the furnace must likewise be displayed. Special reference may also be made to instructions for proper and safe operation and maintenance. Every duct furnace must be accompanied by printed instructions covering these features. It is also required that they

Thirty-five approval and listing requirement standards for gas-burning appliances and accessories, including two American War Standards, have been approved by the American Standards Association. The standards are developed by a representative sectional committee organized by the American Standards Association and working under the sponsorship of the American Gas Association.

The standards provide requirements which must be met by these gas-burning appliances before they are granted the privilege of carrying the AGA Seal of Approval or before they are listed as acceptable by the American Gas Association.

The two American War Standards provide emergency requirements and specifications for domestic gas ranges and for gas water heaters which will be in effect for the duration. The new gas range standard will be in effect as soon as the war is over.

A complete list of the approved gas appliance standards may be obtained from the American Standards Association.

Copies of the three recently approved standards, Approval Requirements for Gas-Fired Duct Furnaces (Z21.34-1942); Approval Requirements for Domestic Gas Ranges (Z21.1-1942); and Approval Requirements for Gas Space Heaters (Z21.11-1942) are available at $1.00 each.

include a statement calling attention to the necessity of installing a duct furnace on the upstream side of cooling coils when used in connection with cooling systems. This is for the purpose of avoiding condensation in the heating element.

Must Meet Exacting Tests

As in all other sets of American Standards covering gas-burning equipment, performance features have been designed to insure ability to meet very exacting conditions for which detailed test procedures are given. Up to a certain point their provisions are generally similar to those for warm-air furnaces. They cover operation of burners and pilots, thermal efficiency, allowable air temperatures, operation of various accessories, wall and floor temperatures, and many others. Probably the most distinctive feature which applies throughout to the standards for duct furnaces is their operation against a static air pressure of 2.0 in. equivalent water column imposed by a restriction at the end of the outlet air duct. When it is considered that in normal operation a substantial air pressure may exist within the duct system, the necessity of insuring that the unit is capable of operating under such a condition is self-evident. Furthermore, the use of a minimum specified air throughput will in certain instances impose a more severe condition than when the maximum throughput is employed. For this reason the tests specified, unless otherwise stated, are conducted at a minimum air throughput. Considering the combination of a back pressure sufficiently high to simulate any to which the furnace is likely to be subjected in practice and delivery of a minimum or maximum air throughput, whichever represents the more severe condition, it will be evident that acceptable performance under provisions of the new standards will insure satisfactory operation under all conditions of service.

Air Temperature Must Be Controlled

To prevent excessive outlet air temperatures, a duct furnace must not discharge air at an average temperature of more than 160 F above room temperature when delivering its minimum specified throughput rating. Furthermore a device must be furnished to shut off the gas supply when the outlet air reaches 250 degrees. Such a device is also required to turn on the gas supply again before the outlet air temperature reaches 110 degrees, thus insuring against delivering of air at too low a temperature.

One of the most important features in the new standards relates to minimum and maximum allowable heating-element temperatures. In all instances a maximum time is specified within which a heating-element temperature of 178 degrees is obtained. As the result of extensive research, this temperature has been found to represent the minimum permissible without the probability of resulting condensation with ensuing corrosive action on the heating element. In addition, the maximum temperature of the heating element must not exceed 875 degrees under continued operation. When this temperature is exceeded it has been found that scaling and deterioration of the heating element results. Both minimum and maximum temperatures specified are determined by use of thermocouples. When these are within the limits stated, ability of the duct furnace to withstand corrosion and other operating conditions for an extended period of time can be insured.

Production Is Restricted

The three standards discussed herein are issued at a time when production of gas appliances, in common with so many other articles, is materially restricted. For this reason a longer interval than usual may elapse before equipment complying with them will generally become available. Demands of the Armed Forces and the necessity for conservation of essential materials, of which steel represents an outstanding example, has made it impossible to produce many lines of durable goods as formerly, including gas appliances. However, many now in use are approaching the end of their normal life and steps must ultimately be taken for their replacement. A tremendous demand for new equipment is thus accumulating against the time it becomes available. If this is to be met acceptably by models incorporating the latest features of design and performance it is evident that suitable standards will materially assist in maintaining the continued improvement which has characterized past developments.

New standards for ranges and space heaters particularly will, it is felt, serve a most practical and useful purpose in establishing a level which such equipment must meet. It must further be remembered that a substantial period of time is necessary to conduct the studies required in the preparation of a set of practical and comprehensive standards and to obtain their acceptance.

Anticipating the demands of the consuming public for improved and modern equipment and the need of meeting it, the wisdom of a policy which constantly elevates the quality of the product which it covers is self-evident.

Beal Represents Telephone Group On Mechanical Committee

H. C. Beal, engineer of manufacture, Western Electric Company, New York, is now representing the ASA Telephone Group as a member of the ASA Mechanical Standards Committee. H. H. Kirkpatrick, superintendent of accounting, Western Electric Company, New York, is alternate representative. Stanley Bracken, general manager of manufacturing of the Western Electric Company, was formerly the Telephone Group representative.

New Foreign Standards Now in ASA Library

THE following new and revised standards, just received by the American Standards Association, may be borrowed by ASA Members, or ordered through the ASA Library.

Great Britain

Revised British Standard

Electrical Protective Relays BS142-1942 (superseding BS142-1927)

New British Standard

Determination of Volatile Matter in Coal and Coke (Appendix to BS1016-1942) PD27-1942

Amendments to British Standards

Electric Lamps for Railway Signalling PD25 (Amendment to BS469-1939)

Method of Testing Dust Extraction Plant and the Emission of Solids from Chimneys of Electric Power Stations PD26 (Amendment to BS893-1940)

Terms and Sizes of Envelopes PD24 (Amendment to BS917-1940)

New Emergency Standard

Coal Tar Pitch Felt Damp-Proof Courses for Temporary War-Time Building BS1067-1942

Amendments to British Emergency Standards

Electric Cable Soldering Sockets PD19 (Amendment to BS 91-1930)

Green Pigments for Paints PD30 (Amendment to BS303-1938)

Lamps and Lamp Caps PD16 (Amendment to BS33-1930, BS98-1934, BS161-1940, BS469-1939, BS495-1933, BS535-1938, BS555-1939, BS793-1938, BS841-1939, BS867-1939, BS941-1941)

Red Pigment (Red Lakes, Toner or Pigment Dyestuffs) PD29 (Amendment to BS333-1938)

Steel Forgings, Blooms and Castings PD31 (Amendment to BS24-Part 4-1941)

Testing the Zinc Coating on Galvanized Articles Other than Wire PD23 (Amendment to BS729-1937)

British Draft Standards and Specifications

Circular Screwing Dies CG (ME) 1932

General Purpose Acme Screw Threads CG (ME) 1694

Methods of Analysis of Steel, Part 1, Sulphur, Phosphorus and Lead

Canada

Standard Dimensions of Small Rivets CESA B71-1942 50¢

Welded and Seamless Steel Pipe CESA B63-1942 50¢

New Zealand

Simplified Practice for the Manufacture of Women's Footwear NZSS E73(SP) September, 1942 (supersedes that dated July, 1942)

South Africa

Asbestos Cement Pressure Pipes SA No. 20-1942

Lime SA No. 3-1942

Lubricating Oil SA No. 1-1942

Wood Charcoal for use in Portable Gas Producers SA No. 19-1942

Switzerland

(The following standards are available in both French and German)

Point d'aniline SNV 81100

Teneur en Cendres SNV 81101

Point de ramollissement et point de goutte SNV 81102

Teneur en acides, Indice d'acidité, Indice de neutralisation SNV 81103

Indice de cokéfaction d'après Conradson SNV 81104

Indice de saponification SNV 81105

Viscotité, frottement interne, fluidité SNV 81106

Point de congélation (Comportement aux basses températures) SNV 81107

Pression de vapeur des carburants (Méthode ASTM selon Reid modifiée) SNV 81108

Poids spécifique SNV 81109

Point d'éclair SNV 81111

Teneur en eau SNV 81111

Eléments non aqueux, non dissous SNV 81112

Analyse d'ébullition SNV 8113

Dissolvants Organiques SNV 81131

Dissolvants Inorganiques SNV 81132

Categories d'emploi SNV 81141

Traitement SNV 81142

Tuyaux en Acier:

sans soudure, étirés à froid ou laminés à froid, Prescriptions techniques de livraison VSM 10630

sans soudure, étirés à froid du laminés à froid, Pour tuyauteries et constructions, Tableau général VSM 11505

Vis à Bois, Tête Demi-Ronde VSM 12800a

Vis à Bois, Tête Conique VSM 12801a

Vis à Bois, Tête Conique-Bombée VSM 12802a

Vis à Bois, Tête Carrée VSM 12803a

Tresses de Cuivre, pour conducteurs flexibles VSM 23857a

Conducteurs Isolés au Caoutchouc ou au Papier, Épaisseur de l'isolation VSM 23860a

Cordes de Cuivre:

rigides, nues, ou étamées VSM 23865a

semi-rigides, nues ou étamées VSM 23866a

flexibles, nues ou étamées VSM 23867b

très flexibles, nues ou étamées VSM 23868b

Nuanse pour le vernissage de machines et appareils, Emploi général VSM 37020aE

OCD Issues New Data On Control of Fire Bombs

New instructions for controlling damage from enemy fire bombs have just been issued by the Office of Civilian Defense in Washington. The instruction sheet, which urges the use of a jet of water as the only safe way to meet the threat of explosion and fire damage from these bombs, also contains a description of the various types of fire bombs used by the Germans and the Japanese.

For copies of the instructions and further information about the methods to be used in fighting fire bombs write to Randolph Felters, chief, Editorial Section, Office of Civilian Defense, Washington, D. C.

Standard Tests and Specifications In WPB and OPA Orders

IN many of the War Production Board and Office of Price Administration orders, standards play an important part, either through reference to existing standards or through setting up standards or simplification schedules in the order itself. Such standards form the basis for control of production, conservation of materials, or for control of prices. The following orders have the effect of setting up standard specifications, tests, grades, or simplification schedules.

War Production Board

Brushes (Limitation Order L-251)—

Painters', Decorators', and Certain Industrial Brushes (Schedule I)—

Lists types and sizes of brushes which may be manufactured, and refers to Federal Specifications to which brushes must conform.

Commercial Dishwashers (Limitation Order L-248)

Provides simplified practices limiting production to three capacities of dishwashers, and specifying the maximum content in pounds of iron and steel and copper base alloy. The maximum motor size of each capacity of washer is given. Other limitations on weight and use of materials are included. Dishwashers manufactured to specifications of the Army, Navy, Maritime Commission or the War Shipping Administration are excepted.

Construction Machinery and Equipment Simplification and Conservation (Limitation Order L-217)

Portable Jaw and Roll Crushers (Schedule II)—

Limits production to a selected list of styles and sizes of crushers.

Portable Construction Concrete Mixers (Schedule V)

Truck Mixer-Agitators (Schedule VI)

Pumps (Schedule VII)

Limits the sizes and types which may be produced.

(For Schedule I, Scrapers, see INDUSTRIAL STANDARDIZATION, December, 1942, page 317.)

Electric Motor Controller (General Conservation Order L-250)—

Lists permissible sizes of squirrel cage and wound rotor motor controllers, of synchronous motor controllers, overhead traveling crane controllers, general purpose and machine tool service controllers, and steel mill auxiliaries and overhead traveling crane controllers. Also limits the type of equipment which may be included with each type of controller which is permitted.

Fans and Blowers (General Limitation Order L-280)

Provides authority for the Director General for Operations to establish "required specifications" for the fabrication, assembly, production, construction, or other manufacture of fans or blowers. Such specifications will be designed to eliminate, reduce, or conserve the use of critical materials in fans or blowers or parts by simplifying or standardizing the fans or blowers; specifying the operating conditions under which they may be used; restricting the number of sizes, types, models, or kinds produced or the kinds or quantities of materials used; or requiring substitution of less critical materials for more critical materials.

Folding and Set-Up Boxes (Limitation Order L-239)

Eliminates the use of paperboard containers for certain specified products (holiday and other seasonal goods, alcoholic beverages, some sporting goods items, etc.); restricts the quality of paperboard; and provides for simplification schedules for boxes. Sizes of containers are simplified for packaging certain foods such as crackers and bakery goods, butter, lard, and oleomargarine, retail and variety boxes. The effect of these simplification schedules, in addition to labor and transportation savings, is to conserve from 225,000 to 250,000 tons of paperboard or from 10 to 12 per cent of the amount of paperboard used during 1942.

Furniture (Limitation Order L-260)—

Provides an approximate two-thirds cut in the number of existing patterns of furniture, and limits the use of iron and steel for manufacture of wood furniture.

Grocers and Variety Bags (Limitation Order L-261)

Schedule A of this Order provides specifications for stock grocers and variety bags, including capacity tolerance, paper weights, and dimension tolerance. The method of measurement and computation of cubic capacity is specified. A table of specifications gives details as to size, shape, minimum capacity, and width of face and bottom, as well as bag length.

Hand Tools Simplification (Limitation Order L-157)

Heavy Forged Hand Tools (Schedule IV)—

Provides tables of the sizes and styles of heavy forged hand tools which may be produced.

Hand Forks, Hand Hooks, Hand Rakes, Hand Hoes, Hand Eye Hoes, and Hand Cultivators (Schedule V)—

Specifies definite types, sizes, and weights allowed, and provides for grades of handles according to Simplified Practice Recommendation R76-40, Ash Handles, issued by

the National Bureau of Standards. Other suitable species of wood having comparable characteristics may be substituted, however. Eliminates the use of all alloy steels and high polished finishes. Simplification reduces varieties and sizes from 915 to 129, or a reduction of 86 per cent, with a resulting saving of between 800 and 1,000 tons of steel per annum.

(For Schedule I see INDUSTRIAL STANDARDIZATION, September, 1942, page 230. For Schedules II, III, and IV see November, page 291.)

Industrial Type Instruments, Control Valves and Regulators; Simplification (Limitation Order L-272)

Control Valves (Schedule I)—

Limits production as follows:

Screwed ends up to and including 2-inch sizes for primary pressure rating of 600 lb and lower as specified in American Standard Steel Pipe Flanges and Flanged Fittings (for maximum WSP of 150 to 2500 lb per sq in., including welding neck flanges) (B16e-1939).

Flanged ends, 2-inch size and above.

Union ends are eliminated.

Flanged body control valves with flanged facings and for primary pressure ratings as follows:

(*a*) Cast steel control valve bodies: 300-lb; 600-lb; 900-lb; 1500-lb as per American Standard B16e-1939. End flange faces are to be either American Standard large male face; American Standard octagonal ring joint groove; or American Petroleum Institute octagonal ring joint groove, providing the groove is cut in the basic flange thickness in the 300-lb pressure class.

(*b*) Cast iron control valve bodies 125-lb and 250-lb according to American Standard B16e-1939.

(*c*) Bronze control valve bodies 150-lb and 300-lb according to Manufacturers Standardization Society of the Valve and Fittings Industry standard SP2.

Reduced area trim in balanced type control valves is to be furnished only where safety considerations require such construction.

The 3¾-inch, 4½ inch, 5 inch, and 7 inch control valves are eliminated.

Materials for control valve bodies are limited to bronze, cast iron, cast carbon steel or forged carbon steel; except that carbon molybdenum steel may be used in the 600-lb, 900-lb, and 1500-lb American Standard primary pressure classes, or for operating temperatures exceeding 1000 degrees Fahrenheit or below minus 50 degrees Fahrenheit.

Liquid Level Controllers (Schedule II)—

Only 1 inch, 1½ inch or 2 inch National Pipe Thread screwed equalizing connection shall be furnished.

Pyrometers and Resistance Thermometers (Schedule III)—

Eliminates special designs and attachments.

National Emergency Specifications for Steel Products (Limitation Order L-211)—

Structural Steel Shapes (Schedule IV)

Lists specifications permissible for general use and those permissible for government orders by grades and by tensile strength. These include specifications of the American Bureau of Shipping, the American Society for Testing Materials, the Association of American Railroads, the American Railway Engineering Association, and the American Association of State Highway Officials for general use; and Army, Navy, and Federal Specifications for government use.

Steel Axles and Forgings (Railroad and Transit Services)—(Schedule V)—

Lists specifications and emergency revisions of the American Society for Testing Materials and of the Association of American Railroads which must be used in production of axles and forgings.

Mechanical Steel Tubing (Schedule VI)

No manufacturer shall be required to schedule for manufacture or delivery cold-drawn seamless mechanical tubing of low carbon steel (carbon less than 0.30 per cent maximum) except in the standard sizes set forth in Table I of this order. No person shall produce, fabricate, or deliver cold-drawn seamless mechanical tubing of low carbon steel (carbon less than 0.30 per cent maximum) for jobber or warehouse stock which does not conform to the requirements set forth in the American Iron and Steel Institute Manual, as revised September 1942, or to Army, Navy, or Federal Specifications.

Rails and Track Accessories (Schedule VII)

Lists specifications of the American Railway Engineering Association and the American Society for Testing Materials and emergency revisions to the specifications which must be followed in all production of rails and track accessories.

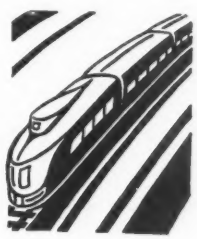
(For Schedules I, II, and III, see INDUSTRIAL STANDARDIZATION, December, 1942, page 318.)

Paper, Standardization and Simplification (Limitation Order L-120)—

Household Wax Paper Rolls in Cutter Boxes (Schedule X)—

Provides maximum specifications for box dimensions and quality of paperboard for waxed paper cutter boxes, and places restrictions on basis weight, width, and length of the wax paper rolls. Reduces grades from 82 to 52, styles by approximately 80 per cent, and saves 227,000 tons of pulp fiber. Transportation and labor savings are also effected.

(For Schedules I, II, IV, and V see INDUSTRIAL STANDARDIZATION, September, 1942, page 231. For revisions of these and for Schedule III, see December, page 319.)



Paper and Paperboard (General Conservation Order M-241, amended Feb. 15, 1943)—

Limits production of paper or paperboard to the percentages indicated for each class or grade. This curtails quarterly production of each mill to from 80 per cent to 90 per cent of the base period for 12 major classes of paper. Twelve types of paper or board may be manufactured without restrictions.

Plumbing and Heating Simplification (Limitation Order L-42)—

Schedule I is revoked and a new Schedule V-a on Plumbing Fixture Fittings and Trim is included.

Grey Cast Iron, Malleable Iron and Brass and Bronze Pipe Fittings—Simplification (Schedule II as amended March 3, 1943)—

Provides new tables of pipe sizes allowed for different types of cast iron, malleable iron, and brass and bronze pipe fittings.

(For Schedule I see INDUSTRIAL STANDARDIZATION, April, 1942, page 98. For Schedules II through X, see June, 1942, page 177.)

Valves and Valve Parts (Limitation Order L-252)—

Limits production of valves and valve parts to a specified list of pressure classes, and provides specifications for different types of valves. End flanges for iron valves and valve parts must conform to American Standards for the corresponding pressure classes, except that for 150 lb and 300 lb valves when made of malleable iron as substitutes for brass valves, flanges conforming to the Manufacturers Standardization Society of the Valve and Fittings Industry bronze flange standard SP-2 may be used. Flanges may be furnished to the American Gas Association flange standard for low pressure gas service.

Face-to-face of flanged valves, size 4 in. and larger, shall comply with American Petroleum Institute standard 5-G-1 and American Standard B16.10 for the pressure classes and types which these standards cover.

For brass or bronze valves and valve parts, end flanges shall conform to Manufacturers Standardization Society of the Valve and Fittings Industry standard 150 lb, SP-2, and 300 lb, SP-12. MSS SP-20 grade A or American Society for Testing Materials' B-62 or EA-B62 brass or bronze is to be used for all valve pressure castings in valves in primary pressure classifications of 125 lb, 150 lb, and 200 lb. MSS SP-20 grade B or ASTM B-61 brass or bronze is to be used for all valve pressure castings in valves in primary classifications of 300 lb or higher.

For steel valves, face-to-face of flange end valves shall comply with American Petroleum Institute standard 5-G-1 and American Standard B16.10 for the types covered. End flange faces for 150-lb pressure class steel valves shall have American Standard 1/16 in. raised face. Bonnet bolting shall be carbon steel having physical properties equal to ASTM A96, Class A, except that when carbon steel having Class A physicals is not obtainable, manganese steels of the SAE 1300 Series or equal may be used. End flange faces for 300-lb pressure class steel valves shall be American Standard 1/16 in. raised face, or API octagonal ring joint groove providing the groove is cut in the basic flange thickness.

Bonnet bolting for steel valves for temperature up to and including 850 F shall conform to National Emergency 9400 series steels or SAE 4140, heat treated to meet specifications for alloy steel bolting material for high-temperature service, ASTM A96, Class B physical properties minimum. For temperatures over 850 F, Grade B14 steel per ASTM A193, heat treated to meet specifications for alloy steel bolting material for high-temperature service, ASTM A96, Class C physical properties minimum.

End flange faces for 600 lb, 900 lb, and 1500 lb pressure classes shall be either American Standard octagonal ring joint groove or American Petroleum Institute octagonal ring joint groove, or ¼ in. American Standard large male face. Bonnet bolting for this type of valve shall conform to the same specifications as indicated above.

Material savings expected as a result of this order are estimated at 650 tons of carbon steel, 4340 tons alloy steel, and 1900 tons of copper per annum. There has been a reduction in the pressure classes of 33 1/3 per cent and in production types of 38.6 per cent. There is a substitution of materials of iron or steel or copper and copper alloys where possible. Plumbing and heating valves, formerly covered in Schedule I of Limitation Order L-42, are now covered in this order, and Schedule I has been revoked. Brass or bronze plumbing and heating valves are allowed in the size range from ⅛ in. to 2 in. instead of from ⅛ in. to 3 in. allowed by L-42.

Wooden Containers for Fresh Fruits and Vegetables (Limitation Order L-232)—

Limits production to containers conforming to specifications given in Schedule A of this order. Specifications listed in the table in Schedule A give inside depth, width, and length of each type of box, hamper, or crate.

Office of Price Administration

Apparel—Simplified Men's and Boys' Shirts and Pajamas (Maximum Price Regulation 332)—

Shirts and pajamas manufactured with curtailments of material and trimmings and other restrictions in accordance with General Limitation Order L-169 of the War Production Board are known as "simplified garments." Such simplified garments are to be labeled with the symbol "-R-". The OPA has ruled that garments made with curtailments of material and trimmings, and restrictions on packing, cannot be considered the "same" as or "similar" to a garment made without such curtailments and restrictions, and all maximum prices for simplified garments must reflect the appropriate reduction in costs.

Poultry and Eggs (Maximum Price Regulation 333)

Eggs and Egg Products—

The grades, sizes, weight classes, and standards for all shell eggs sold to retailers and commercial, industrial, institutional or non-federal governmental users, for which maximum prices are established by the OPA, are those promulgated by the United States Department of Agriculture in its publication "Tentative U. S. Standards and Weight Classes for Consumer Grades for Shell Eggs." For the United States Government these Tentative U. S. Standards or the "Tentative U. S. Procurement Grades" promulgated by the U. S. Department of Agriculture shall be used.

British Standardize Layout for Commercial Invoices

The need for conserving paper has resulted in adoption of a British Standard Specification for Commercial Invoices, limiting the number of sizes and specifying the layout and arrangement of the information given in the invoice.

It is expected that a generally recognized position for the items of information normally provided in invoice forms will provide greater convenience in invoicing and in use of aperture envelopes.

Standards Issued by Associations and Government

(See "ASA Standards Activities", page 102, for new American Standards and progress on ASA projects)

For the information of ASA Members, the American Standards Association gives here a list of the standards received during the past month by the ASA Library for its classified files. With the increasing amount of material being received it has been decided to eliminate from the monthly list a few of those standards which may not be so important to ASA Members, such as Federal Specifications for foods. The list below, therefore, includes only those standards which the American Standards Association believes will be of greatest interest to Members in connection with their war production.

The standards listed may be consulted by ASA Members at the ASA Library, or copies may be obtained from the organization issuing the standard. Addresses of these organizations are given for your convenience.

Associations and Technical Societies

American Iron and Steel Institute (350 Fifth Avenue, New York, N. Y.)

Steel Products Manual, Wrought Steel Wheels Section 20 January, 1943 25¢

American Society for Testing Materials (260 South Broad Street, Philadelphia, Pa.)

ASTM Specifications, Methods of Tests, etc.

The letter T following a designation indicates the standard is Tentative. Where an additional number appears within parentheses, it indicates there is an Emergency Alternate Provision attached to the standard. Each standard is 25¢.

Electrical-Heating and Resistance Alloys. (A compilation of ASTM standards prepared by Committee B4 on Electrical-Heating, Electrical-Resistance and Electric-Furnace Alloys) October, 1942 $1.50

Steel for Bridges and Buildings A7-42

Carbon-Steel Castings for Miscellaneous Industrial Uses A27-42 (EA-A27)

Carbon-Steel and Alloy-Steel Castings for Railroads A87-42 (EA-A87)

Gray Iron Castings for Valves, Flanges, and Pipe Fittings A126-42

Alloy-Steel Castings for Structural Purposes A148-42 (EA-A148)

Corrosion-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip A167-42 (EA-A167)

Corrosion-Resisting Chromium Steel Plate, Sheet, and Strip A176-42

Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes A209-42 (EA-A209)

Electric-Resistance-Welded Steel Heat-Exchanger and Condenser Tubes A214-42 (EA-A214)

Carbon-Steel Castings for Fusion Welding for Service at Temperatures Up to 850 F A216-42T (EA-A216)

Alloy-Steel Castings for Fusion Welding at Temperatures from 750 to 1100 F A217-42T (EA-A216)

Carbon-Steel Forgings for Locomotives and Cars A236-42

Alloy-Steel Forgings for General Industrial Use A237-42

Alloy-Steel Forgings for Locomotives and Cars A238-42

Corrosion-Resisting Chromium and Chromium-Nickel Steel Plate-Sheet, and Strip for Fusion-Welded Unfired Pressure Vessels A240-42 (EA-A240)

Light Gage Structural Quality Flat Hot-Rolled Carbon Steel A245-42T

American Society for Testing Materials—(Continued)

Light Gage Structural Quality Flat Rolled Carbon Steel A246-42T

Atomic-Hydrogen-Arc-Welded and Electric-Resistance-Welded Alloy-Steel Boiler and Superheater Tubes A249-42 (EA-A249)

Copper Brazed Steel Tubing A254-42T

Torsion Tests of Cast Iron A260-42T

Cartridge Brass Sheet, Strip and Disks B19-42T (EA-B19)

Bronze Castings for Turntables and Movable Bridges and for Bearings and Expansion Plates of Fixed Bridges B22-42T (EA-B22)

Aluminum Sheet and Plate B25-42T

Aluminum-Base Alloy Sand Castings B26-42T

Brass Sheet and Strip B36-42T (EA-B36)

Aluminum for Use in Iron and Steel Manufacture B37-42T

Aluminum-Base Alloys in Ingot Form for Sand Castings B58-42T

Seamless Copper Tubing, Bright Annealed B68-42T

Aluminum-Alloy (Duralumin) Sheet and Plate B78-42T

Aluminum-Magnesium Alloy Sheet and Plate B79-42T

Aluminum-Base Alloy Die Castings B85-42

Aluminum-Alloy (Duralumin) Bars, Rods, Wire, and Shapes B89-42T

Aluminum-Manganese-Chromium Alloy Sheet and Plate B109-42T

Testing Nickel and Nickel-Alloy Wire and Ribbon for Electronic Tube Filaments B118-42T

Leaded Brass Sheet and Strip B121-42T (EA-B121)

Copper-Nickel-Zinc and Copper-Nickel Alloy Sheet and Strip B122-42T (EA-B122)

Aluminum-Base Alloys in Ingot Form for Die Castings B125-42T

Aluminum-Manganese Alloy Sheet and Plate for Use in Welded Pressure Vessels B126-42T

Cartridge Brass Cartridge Case Cups B129-42T (EA-B129)

Gilding Metal Sheet and Strip B130-42T (EA-B130)

Gilding Metal Bullet Jacket Cups B131-42T (EA-B131)

Phosphor Bronze Rods, Bars, and Shapes B139-42T (EA-B139)

High-Leaded Tin Bronze Sand Castings B144-42T (EA-B144)

Leaded Red Brass and Leaded Semi Red Brass Sand Castings B145-42T

Leaded Yellow Brass Sand Castings for General Purposes B146-42T (EA-B146)
High-Strength Yellow Brass and High-Strength Leaded Yellow Brass Sand Castings B147-42T
Aluminum-Bronze Sand Castings B148-42T
Leaded Nickel-Brass (Leaded Nickel-Silver) and Leaded Nickel-Bronze (Leaded Nickel-Silver) Sand Castings B149-42T
Testing Lateral Wire for Grids of Electronic Devices B156-42T
Aluminum Bronze Sheet and Strip B169-42T (EA-B169)
Round Nickel Wire for Lamps and Electronic Devices B175-42T
Copper-Base (Brass) Alloy Die Castings B176-42T
Special Grade Zinc-Base Alloy Die Castings B186-42T
Thermal Conductivity of Materials by Means of the Guarded Hot Plate C177-42T
Colorfastness to Commercial Laundering and to Domestic Washing of Cotton and Linen Textiles D435-42
Kinematic Viscosity D445-42T
Testing Pin-Type, Lime Glass Insulators D468-42
Evaluating Degree of Erosion of Exterior Paints of the Linseed-Oil Type D662-42T
ASTM Thermometers E1-42T
Preparation of Metallographic Specimens E3-42T
Tension Testing of Metallic Materials E8-42
Terms Relating to Rheological Properties of Matter E24-42
Softening Point (Ball and Shouldered Ring Apparatus) E28-42T
Characteristics of Standard Carbon Arc Accelerated Weathering Unit E42-42T
Identification of Crystalline Materials by the Hanawalt X-Ray Diffraction Method E43-42T
Determining the Inclusion Content of Steel E45-42T

ASTM Emergency Standards

85 Per Cent Magnesia Thermal Insulating Cement ES-8
Long-Fiber Asbestos Thermal Insulating Cement ES-9
Mineral Wool Thermal Insulating Cement ES-10
Expanded or Exfoliated Mica Thermal Insulating Cement ES-11
Diatomaceous Silica Thermal Insulating Cement for Use from 600 to 1200 F ES-12
Diatomaceous Silica Thermal Insulating Cement for Use from 1200 to 1900 F ES-13
Blanket Thermal Insulation for Building Purposes ES-14
Blanket Thermal Insulation for Industrial Purposes ES-15
Blanket Thermal Insulation for Refrigeration Purposes ES-16
Preformed Pipe Covering Thermal Insulation ES-17
Preformed Block Thermal Insulation ES-18
Structural Insulating Board (Thermal Insulation) ES-19

Association of American Railroads—Operations and Maintenance Department—Operating-Transportation Division, Telegraph and Telephone Section (30 Vesey Street, New York, N. Y.)

Emergency Alternate Provisions to Specifications

Splicing Lead Sheathed Paper Insulated Cables 1-A-12 February, 1943
Tin-Antimony Wiping Solder 1-A-38 February, 1943
Long Handle Shovels 1-A-88 February, 1943
Digging Spoons 1-A-89 February, 1943
Rosin Core Solder AAR-1-A February, 1943
Table N-1 covering Minimum Wire Sizes of Specification for Communication Lines Crossing the Tracks of Railroads 1-B-1 February, 1943

International Acetylene Association (30 East 42nd Street, New York, N. Y.)

Installation and Operation of Oxy-Acetylene Welding and Cutting Equipment, Safe Practices for Revised 3rd ed, 1942 25¢
Oxy-Acetylene Cutting 1942 25¢
Welding Codes and Specifications Revised 2nd ed, 1942 15¢

National Aircraft Standards Committee (Aeronautical Chamber of Commerce of America, 610 Shoreham Building, Washington, D. C.)

NAS 34-38, NAS 204-235 (these 37 standards cover screws, pulleys, end-rods, etc.) December, 1942

National Electrical Manufacturers Association (155 East 44th Street, New York, N. Y.)

Electric Arc-Welding Machine and Electrode Standards No. 42-81 December, 1942 (superseding No. 36-37) 75¢
Installation, Operation and Care of Panelboards No. 42-82 November, 1942 25¢

National Board of Fire Underwriters (85 John Street, New York, N. Y.)

Carbon Dioxide Fire Extinguishing Systems and Inert Gas for Fire and Explosion Prevention Pamphlet No. 12, October, 1942

National Fire Protection Association (60 Batterymarch Street, Boston, Mass.)

National Fire Codes for Extinguishing and Alarm Equipment 1943 $3.00 (clothbound)

Underwriters' Laboratories, Inc. (161 Sixth Avenue, New York, N. Y.)

Gas-Tube-Sign and Oil-Burner-Ignition Cable 2nd ed February, 1943
Underfloor Raceways and Fittings 2nd ed February, 1943

U. S. Government

(Wherever a price is indicated, that publication may be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C. Otherwise copies of the document may be obtained from the governmental agency concerned.)

National Bureau of Standards (Washington, D. C.)

Maintenance of Elevator Mechanical Safety Appliances Circular C442 5¢
Paints and Other Protective Coatings for Tires Letter Circular LC709

Commercial Standards

In Print

Cotton and Rayon Velour (Jacquard and Plain) CS103-42 5¢

Emergency Standards

Boys' Pajamas CS (E) 106-43
Commercial Electric Refrigeration Condensing Units CS-(E) 107-43

Simplified Practice Recommendations

Before Industry for Acceptance

Carbonated Beverage Bottles R123-30

Approved by Industry

Adhesive Plaster Revision of R85-37
Cloth Window Shades R199-43
Wire Rope R198-43

In Print

Agricultural Insecticide and Fungicide Packages R41-42

Federal Specifications Executive Committee (U. S. Treasury Department, Washington, D. C.)

Federal Specifications

(Copies available from Superintendent of Documents, Government Printing Office, Washington, D. C.)

The date after the title of the specification indicates when it becomes effective.

Aluminum (AL-2); bars, rods, shapes, and wire (superseding QQ-A-411a) QQ-A-411b March 15, 1943

Aluminum-Alloy (AL-3) (Aluminum-Manganese); bars, rods, shapes, and wire (superseding QQ-A-356a) QQ-A-356b March 1, 1943

Aluminum Alloy (AL-53) (Aluminum-Magnesium-Silicon-Chromium); bars, rods, shapes, and wire (superseding QQ-A-331a) QQ-A-331b February 15, 1943

Cambray (superseding CCC-C-231) CCC-C-231a March 15, 1943

Chisels, Gouges, and Slicks; woodworkers' (Amendment 1) GGG-C-311 March 15, 1943

Fiberboard; insulating (Amendment 1) LLL-F-321b March 15, 1943

Fuses:

- cartridge, inclosed, nonrenewable (Amendment 1) W-F-791a March 1, 1943
- cartridge, inclosed, renewable (fusible links not separately inclosed), and renewable links therefor (Amendment 1) W-F-803a March 1, 1943
- cartridge, inclosed, renewable (fusible links separately inclosed) (Amendment 2) W-F-805 March 1, 1943
- plug, nonrenewable (Amendment 2) W-F-831 March 1, 1943

Iron, Gray; casings (Amendment 3) QQ-I-652 February 1, 1943

Lamp-Auxiliaries; fluorescent (Amendment 1, 1942, Supplement) W-L-131 February 1, 1943

Lamps; electric, incandescent, miniature, tungsten-filament (Amendment 4) W-L-111b February 1, 1943

Leather; hydraulic-packing, mineral-tanned (regular and non-corrosive) (new) KK-L-177 February 1, 1943

Saws (superseding GGG-S-61) GGG-S-61a March 1, 1943

Screw Drivers (Amendment 3) GGG-S-121a March 15, 1943

Tableware; plastic (new) L-T-48 February 15, 1943

Wrenches, Bolt and Nut; nonadjustable (open-end and box) (new) GGG-W-636 March 15, 1943

Emergency Alternate Federal Specifications

Hose:

- oil-suction and discharge EZZ-H-481b January 12, 1943
- pneumatic, braided (superseding E-ZZ-H-496, 7/7/42) E-ZZ-H-496 January 21, 1943

Ladders:

- extension, sectional, and straight, and ladder-shoes E-LLL-L-51 January 12, 1943
- step E-LLL-L-61 January 12, 1943

Linoleum:

- battleship (superseding E-LLL-L-351a; 7/7/42) E-LLL-L-351a January 21, 1943
- inlaid, and molded E-LLL-L-359 January 21, 1943
- plain, jaspe and marbleized E-LLL-L-367 January 21, 1943

Receptacles (Convenience Outlets); attachment plugs, current taps, and connectors (superseding E-W-R-151, 3/27/42) E-W-R-151 January 12, 1943

U. S. Department of Labor (Washington, D. C.)

Children's Bureau

Advisory Standards for Shipbuilding No. 2 December, 1942

Advisory Standards for Lead and Lead-using Industries No. 3 December, 1942

Division of Labor Standards

Safe Handling of Nitric Acid

U. S. Army and Navy

List of Materials and Process Specifications for use in the maintenance and construction of aircraft (Lists Air Corps, Army-Navy Aeronautical, U. S. Army, and Federal Specifications) May be obtained for use in connection with Air Corps contracts and for bidding purposes upon request to the Assistant Chief, Material Division, Wright Field, Dayton, Ohio. Bulletin No. 23, February 10, 1943

Bureau of Mines (U. S. Department of the Interior, Washington, D. C.)

Coal Miners' Safety Manual 1942 25¢

U. S. Office of Civilian Defense (Washington, D. C.)

Communal Air Raid Shelters OCD 2014 November, 1942

Standards Council Members

The following changes have been made in the membership of the ASA Standards Council:

American Institute of Electrical Engineers—J. R. North, Commonwealth and Southern Corp., Jackson, Michigan, succeeds A. H. Kehoe as representative. Mr. North is chairman of the AIEE Standards Committee. H. E. Farrer and E. B. Paxton continue as alternate representatives.

American Society of Mechanical Engineers—John E. Lovely, vice-president, Jones & Lamson Machine Company, succeeds A. L. Baker. Alfred Iddles is the second representative. C. B. LePage and W. C. Mueller are alternate representatives.

American Water Works Association—M. Warren Cowles succeeds Richard Hazen as alternate representative. Mr. Hazen is now an officer in the U. S. Navy.

Federal Works Agency—Colonel Wm. N. Carey, chief engineer of the Federal Works Agency, succeeds George D. Babcock. Pere Seward, assistant chief of the Projects Division, is alternate representative. Thomas H. MacDonald, Commissioner of the Public Roads Administration, was reappointed as representative for a three-year term.

National Conservation Bureau—Julien H. Harvey, managing director, succeeds A. W. Whitney, retired.

New Company Member Points to Value of ASA

The Geiger Iron Works, Inc., of Stockton, California, has just become a new Company Member of the American Standards Association. In joining the ASA the company declared:

"As operators of a jobbing shop we are well aware of the value of the work that you are doing. I think no other type of organization incurs such a variety of obstacles in the nature of 'special construction' as does a jobbing shop. Situated oftentimes far from the original manufacturer we can only hope that some time the fellow who designed the piece of equipment we have to repair will be faced with a similar problem some day and as a result will alter his ways.

"Our organization is much too small to have much influence in the setting of the standards so the only way we have of making ourselves heard by the manufacturers of non-standard items is by the support of your organization.

"We trust that you will be able to continue in the future with as much benefit to industry as a whole as you have in the past."

How Standards Are Used In Price and Rationing Control

by Willis S. MacLeod

Chief of Technical Operations,
Office of Price Administration

THE mechanism by which the quality of commodities is pegged to price is standards. For one reason or another the word "standard" and its meaning has, during recent months, been surrounded with an aura of confusion. A group of us, presumed to be versed in the "art" have attempted to define it along the following lines:

"A standard is any statement or form of identification or basis of comparison, of measurable characteristics of a product or service, for the purpose of identifying the product or service. It may range in scope from a simple definition of one important characteristic to the complete coverage of all significant characteristics of both construction and performance. Definitions, specifications, methods of tests, simplification, or classification are 'standards'."

Defines Basis of Standards Work

After writing this we have sometimes wondered if the definition has not added to the confusion. In any event, it roughly defines the basis on which the job is done in Washington.

While the technique of using quality standards is fairly universal in application it might be well to differentiate somewhat in their application to varying types and classes of commodities.

To define the qualities of natural products such as foods, it is necessary to classify the range of varieties into bands of quality. For these commodities the applicable standards method is to establish grades such as has been done in the standards of the Agricultural Marketing Administration for meats, canned fruits and vegetables, and other agricultural commodities.

This is frequently true for other commodities where several individual quality levels are necessitated by raw material or manufacturing process. In the case of rubber heels made principally from all reclaimed rubber, four grades based upon simple standards of abrasive index and tensile strength were established. In contrast to farm products, manufacturers can more readily adjust their production to the standard. Also where improved production methods are developed the standard can be adjusted to take these into account.

The third application is through the development of a "war model" standard. War models are specified models of commodities designed to provide maximum war-time serviceability at given price levels with a minimum drain upon labor, critical materials, and transportation facilities. These may range from a standard employing performance requirements exclusively; to one which combines performance with minimum constructional provisions; or one containing only constructional specifications.

The ideal approach to the production of war models is through the performance standard which establishes a minimum level of serviceability. This then allows variation in manufacture, consistent with available machinery and productive facilities. Such models should not be confused with the totally interchangeable standardized products which have been common in individual manufacturer's products nor does it necessarily follow that these models are identical in styling or design. For example, the English have utilized this technique quite extensively for clothing and it is reported that people are better dressed than ever before. In cotton clothing some 80 basic fabrics are specified in England, together with certain essential constructional requirements which insure the most effective utilization of materials to provide maximum serviceability. Style is left totally free within limitation of yardage per unit.

Insure Serviceability

Standards developed for price control, which I have discussed above, are equally applicable to insure that the commodities rationed represent fair and equitable serviceability in terms of the coupon or point values surrendered. Again using the English experience as an example, one of the principal reasons for the "utility" programs there has been to direct production into serviceable

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Abstracted from an address presented before The American Management Association Conference, Chicago, January 14, 1943.

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items having, so far as possible, the life of the product which was the basis for calculating the quotas and point values established in their rationing scheme. Commodities rationed must be clearly identified so they can be distinguished from one another and readily separated from non-rationed goods. Standards not only make identification possible but provide the basis upon which lower income groups are assured continued availability of the commodity rationed at fair prices and on fair shares.

Cost-of-living Goods Most Important

Greatest emphasis is being placed [by OPA] on items of consumer goods of first importance to the cost of living. Emphasis is also being placed upon the essentiality of the commodities. These fields are foods, fuels, clothing and footwear, textiles, rubber products, consumer goods, paper products and containers, and drugs. Work is also going forward in certain items of farm machinery and chemicals.

Our standards organization consists of a comparatively small force of specialized technical people dealing with each related group of commodities. The commodity sections in which a nucleus staff has been set up cover commodities in the fields of: Textiles, leather and apparel; consumer durable goods; food and drugs; rubber and rubber products; home furnishings; agricultural machinery and paper and containers.

Courtesy Office of Price Administration

Standards insure that the commodities rationed represent fair and equitable serviceability in terms of the coupon or point values surrendered.

A branch on testing is also being organized within the Division to arrange for laboratory tests of commodities where this is necessary.

Wide use is made of the facilities and assistance of government agencies who have carried on work in the standards field. These include such bureaus as the National Bureau of Standards and the Bureau of Home Economics and the Agricultural Marketing Administration of the Department of Agriculture and the Food and Drug Administration. The assistance of recognized standardizing bodies such as the American Standards Association and the American Society for Testing Materials are being utilized in every way we can. Wherever possible standards and specifications which have already been promulgated by these agencies and groups are used bodily or after having made needed adjustments to fit wartime requirements. Industry is regularly consulted and participates in carrying out our work. Arrangements are being made whereby representatives of consumer groups such as American Association of Home Economics, American Association of University Women and the school, business and farm women's organizations and others can assist us in the determination of consumer needs and the effectiveness of our standards from the user viewpoint.

Earlier, I have touched on commodity testing which is involved in developing quality standards. In the absence of adequate information as to the qualities of the goods being produced, it becomes necessary to test a few representative samples to supply us with this information. This testing work will be conducted, for the most part, in government laboratories in Washington. Where these facilities are now taxed to capacity, arrangements will be made for qualified commercial, private, and university laboratories to carry out this work.

Testing Is Needed

After having included standards requirements in price and rationing regulations, it is sometimes necessary to inspect the product and where it cannot be determined by this inspection that the commodity complies with the quality requirements, tests are necessary. This comparison then indicates whether the commodity is within the tolerances on quality allowed and what adjustments must be made for future compliance. Since testing is a specialized activity and existing facilities can be utilized, none of the actual testing work will be done in OPA. OPA will not establish any testing bureau or laboratory, nor will any of our technicians be assigned actual testing work except in a very few isolated instances. There has been some misunderstanding among laboratory and marketing people in this regard.

Standards work in connection with production limitation and materials allocation is carried on

Courtesy Modern Industry

"By requiring grade labeling, OPA makes it possible to set uniform dollar-and-cents ceiling prices at the processor level and to carry these ceilings through to the consumer," explained Prentiss Brown, director of the OPA, recently.

in the Simplification Branch of the Conservation Division of the War Production Board under the direction of Mr. Howard Coonley. This Division cooperates with the Office of Civilian Supply and the Industry Divisions of the War Production Board in working out standardization and simplification programs required in the Board's operations. Our standards activities are designed to provide the necessary quality identification in our price and rationing operations. Those of the War Production Board are concerned with the field of production of goods and supplies, material allocation, and conservation of critical material.

The standards developed for a given material in each of these groups can often be applied equally well in the operations of both Offices. Consequently the work of the Standards Division and the Conservation Division is most closely coordinated so that as much of the work as possible done in one group can be utilized by the other. Arrangements are made so that both groups do not work on the same problem. Quite frequently it is possible to complete the work speedily through an assignment of individuals from both staffs to a given project in order that coordination is made most effective. . . .

Concentrates on Standard Products

Any well worked out wartime standardization program, in the process of achieving the simplification which is its goal, will naturally reduce the number of types, styles, and varieties offered in the markets and concentrate production on the remaining varieties which are defined by the standards. In the great majority of cases, however, it is expected that there will still be as many varieties offered as are necessary to satisfy wartime needs of consumers. The essence of standardization is *not regimentation* but *controlled variation*. It is a technique which frees sound technological improvements and simplification. At a luncheon in Washington on December 10, Mr. Nelson stated "Our war production effort is now entering the phase in which technological improvements must play a major role, if production of war goods must be expanded greatly during 1943. For a large part of the increase in production we must rely on our ability to find ways to make more with what we have." Again, before the Association of National Advertisers in New York on November 11, Mr. Nelson stated the importance of simplification, "because it will enable us to get more goods with less manpower and less material". If properly applied, standardization and simplification are important ways of increasing civilian production or of preventing it from decreasing as rapidly as it otherwise might.

I think also it should be made perfectly clear that the sole purpose of developing and using standards for consumer goods so far as our work in OPA is concerned (aside from their use in rationing) is to define quality in order that price can be closely related to it. Only in this way can we fulfill our responsibility to the American people of achieving good price regulation. The use of standards, therefore, is in no sense "a reform" but is simply a necessity for adequate price control. The experience with existing OPA regulations as well as the experience in other countries has shown that such a use of standards and labeling does not imply the suppression of brand names.

For example, approximately a year ago the OPA issued Maximum Price Regulation Number 89 covering bed sheets. In this regulation sheets are priced according to grade standards and the manufacturer is required to grade-label his product. As you all know the use of brand names in merchandising bed sheets continues under this regulation just as it did before it was issued.

In Canada, grade labeling of canned fruits and vegetables has been mandatory for over ten years. The nationally advertised brands have continued to sell in good volume. The principal result that can be traced has been an increase in the efficiency with which growers and packers have picked and processed the product paralleled with a shift in consumer preferences for the better grades of canned fruits and vegetables. More grade B product has been processed and more of it sold.

Standards have long been recognized in commodity and other markets as the only workable technique of creating a common language for buyers and sellers. Our most efficient markets such as the wheat market, and the corn market, are efficient in large part because a buyer in Buffalo and a seller in North Dakota and a broker in Chicago each automatically know what the other mean when they say "No. 1 Red Winter Wheat". The reason they know this is because No. 1 Red Winter Wheat is defined by a standard. While this precision of definition and this efficiency in buying and selling is not possible of achievement to the same degree in buying and selling consumer goods, it is still true that the use of standards provides a commonly understood language for buyers and sellers and thus simplifies marketing operations for consumer goods.

When a third party, in this case a price regulation, enters the buying and selling transaction it is of particular importance that the terms of the regulation be as simple as possible and that they have the same meaning for buyers, sellers and the enforcement agents. A principal technique for simplifying regulations for purposes of achieving this understanding is the use of specific standards to which specific prices can be tied.

In general, I think it can be said that while manufacturers and sellers will naturally have to make adjustments in marketing practices, those who distribute products which give fair quality at fair prices have little to fear from standardization and simplification as it is being worked out in Washington.

Safety for Young Workers

Department of Labor Issues Advisory Standards

The present labor shortage is making it necessary in many cases to employ children under 18 years of age in industries which are recognized as being especially hazardous for young workers. Despite the special problems which rise in the employment of children under 18, it may be perfectly safe to use them in certain dangerous occupations if precautions are taken, the Children's Bureau of the U.S. Department of Labor announces.

In order to provide a guide to employers as to the type of jobs connected with dangerous war production in which younger workers may be used under proper supervision, the Children's Bureau is issuing a series of Advisory Standards entitled "Which Jobs for Young Workers?" Three pamphlets in this series have already been published, and a fourth is nearly completed.

The first of these pamphlets discusses the employment of young workers in general, and explains the purpose of the series. Up to this time the rulings of the Bureau as to occupations hazardous to minors have been issued as mandatory legal orders establishing a minimum age of 18 years for employment under the Fair Labor Standards Act. The following have been declared particularly hazardous for minors and come under this type of ruling by the Bureau: All occupations in explosives plants; motor-vehicle drivers and helpers; all occupations in coal mining with the exceptions of specified surface occupations; all occupations in logging and sawmilling with certain specified exceptions; operation of woodworking machines and certain types of offbearing; occupations involving exposure to radioactive substances. The new advisory standards are not mandatory legal orders under the Fair Labor Standards Act as are the orders formerly issued.

The second pamphlet in the series of advisory standards applies to shipbuilding. It lists the kinds of work to which workers 16 and 17 years of age should be limited during the first six months of their employment and the kinds of work in which they should not be employed at any time.

Lead and lead-using industries are the subject of the third pamphlet. A limitation of 1.5 milligrams of lead per 10 cubic meters of air is recommended as a reasonably safe working condition, although special precautions must be taken against exposing young workers to lead dust and fumes since they are in general more susceptible than older workers. It also lists the kinds of jobs in these industries in which workers under 18 years of age should not be employed. A list of jobs suitable for 16- and 17-year-old workers is given.

The fourth pamphlet, still in mimeograph form, covers jobs for young workers in operating metal-working machines.

Copies of the pamphlets can be obtained without charge from the Children's Bureau.

Emergency Revisions Bring ASTM Standards in Line with War Needs

Changes affect standards on steel, copper wire, metal, and rubber products

SEVEN new emergency specifications covering heavy forgings, primarily for use in turbine and generator parts, as well as war-time revisions of standards on rubber products, nonferrous metals, and alloys, have just been approved by the American Society for Testing Materials.

The committee on heavy forgings, which developed the new emergency standards, functions under the National Emergency Steel Specifications Committee. The primary objective of this group was to concentrate production on a limited number of steels and to agree on standardized test methods and inspection, so that production of rotors, gears, and related turbine and generator parts could be expedited. These specifications, which will soon be published and available from the ASTM, are:

Carbon-Steel and Alloy-Steel Magnetic Retaining Rings for Turbine Generators ES-21
Alloy-Steel Non-Magnetic Coil Retaining Rings for Turbine Generators ES-22
Carbon-Steel Ring Forgings for Main Reduction Gears ES-23
Carbon-Steel and Alloy-Steel Pinion Forgings for Main Reduction Gears ES-24
Carbon-Steel and Alloy-Steel Turbine Generator Rotors and Shafts ES-25
Carbon-Steel and Alloy-Steel Turbine Rotors and Shafts ES-26
Carbon-Steel and Alloy-Steel Turbine Bucket Wheels ES-27

Emergency Provisions for Forgings Standard

In this same work the committee on heavy forgings developed emergency provisions in two ASTM specifications covering Carbon-Steel Forgings for General Industrial Use (A 235-42) and Alloy-Steel Forgings for General Industrial Use (A 237-42). In the carbon general forging specification a new grade is being added to cover forgings over 20 in. in solid diameter or thickness with minimum tensile strength of 70,000 psi and elongation in 2 in. of 20 per cent minimum. In the alloy specification a new requirement for Class B forgings in big sizes will require a tensile strength of 80,000 psi and a minimum elongation of 18 per cent in 2 in.

Copies of these emergency alternate provisions and the specifications can be obtained from the American Society for Testing Materials at a nominal charge of 25 cents each.

In order to provide complete standard requirements for water well pipe which is generally covered by Specifications for Welded and Seamless Steel Pipe (A 53-42) and Specifications for Welded Wrought Iron Pipe (A 72-39), an emergency alternate provision has been issued covering Grade C, Drive Pipe, which is seamless or electric-resistance welded material. Tensile and flattening test requirements are covered, and hydrostatic test pressures. This drive pipe is available in nominal sizes from 6 to 16 inches. Test pressures range from 1100 psi on the 16 in. size in welded and Grade C material to 2000 psi for the 6 in. size with lower values for the lap welded and Grade A materials.

New Specifications for Bolting Material

In the two-day series of meetings which Committee A-1 held in Philadelphia on January 20 and 21, a number of other actions were developed including proposed new specifications for heat-treated carbon steel bolting material for high-temperature service. Material covered is limited to 2 in. and under in diameter for pressure vessels, valves, flanges, and fittings for high-temperature service. The material must conform to a minimum tensile strength of 100,000 psi, yield point of 75,000 psi, elongation in 2 in. of 16 per cent, and reduction of area of 45 per cent. The required chemistry in 0.55 per cent carbon maximum, 0.90 per cent manganese, 0.04 per cent minimum phosphorus, 0.05 per cent sulfur, 0.15 to 0.30 per cent silicon.

As an emergency matter the committee recommended that a new grade of weldable carbon steel castings be set up applicable for valves and fittings. This provision will be issued by the Society by a "pink slip" applicable to Specification A 216 which applies to weldable material for high-temperature service.

Emergency Provisions for Condenser Tubes

An emergency provision involving specifications for electric-resistance-welded steel heat-exchanger and condenser tubes, A 214, would permit the purchase of unnormalized tubes with a maximum Rockwell of B 80 and an alternate method of non-destructive electrical testing in lieu of

hydrostatic testing, with a further change in flattening test requirements.

ASTM Committee E-3 on Chemical Analysis of Metals has perfected two new ASTM methods, one covering Analysis of Zinc-Base Alloy Die Castings (E 47-42T) and the other Chemical Analysis of Tin-Lead-Base Solder Metal (E 46-42T). The latter supersedes the existing Tentative Methods of Chemical Analysis of Alloys of Lead, Tin, Antimony, and Copper (B 18-36T). The standard for analysis of solder metal prescribes methods for determination of tin, arsenic, antimony, copper, bismuth, and iron. In this class of alloys, content of lead is taken by difference. The committee is developing methods for determining zinc and aluminum in solder metal and when finally perfected these will undoubtedly be issued as a supplement to this standard E 46. The other new method E 47 covers the determination of lead, aluminum, copper, magnesium, cadmium, and iron in zinc-base alloys, these materials being covered in the Tentative Specifications for Zinc-Base-Alloy Die Castings (B 86-41T).

Important changes have been made in the emergency provisions affecting the Specifications for Soft Solder Metal (B 32-40T). These involve some additional recommended emergency grades and the inclusion of considerable appended data on uses and applications as well as properties.

In the interest of procurement, Committee B-1 on Copper and Copper-Alloy Wires for Electrical Conductors has included an emergency provision in the Specifications for Concentric-Lay-Stranded Copper Cable, Hard, Medium-Hard, or Soft (B 8-41) to permit the use of lead and lead-coated wires in accordance with another emergency specification covering this material. In 23 specifications in the field of copper and copper alloys, emergency provisions are now in force permitting use of fire-refined copper, this material being covered in an Emergency Standard ES-7.

Emergency alternate provisions in two specifications covering Friction Tape for General Use for Electrical Purposes (D 69-38) and Rubber Insulating Tape (D 119-38) have been developed by the Committee on Rubber Products to aid in procurement and to bring them into line with orders issued by the WPB.

In the specification for insulated wire and cable, D 469, the emergency provisions are intended primarily to conserve rubber and provide an agreed-on specification for insulation which may be operated at copper temperatures above 60 C. The requirements are acceptable to a number of organizations whose inspection or activities involve a use of the material and, the ASTM announces, since there has been no other standard available, the new provisions will serve an important need and can be referred to in restrictive orders of the War Production Board and can be made available to commercial organizations and to Underwriters' Laboratories.

Ideas on Standards— For the Army

The Army wants ideas on standards—and on many other problems. Bridges, camouflage, construction, photography, printing, roads, safety, sanitation, and specifications are only a few. The Engineer School at Fort Belvoir, Virginia, is asking for suggestions from soldiers, from sailors, or from civilians.

A suggestion system, now more than a year old, has been set up by the School, and all suggestions which might be helpful to the Army Corps of Engineers are welcomed. To date 11 per cent of the suggestions have been approved and put to use. No useful idea is too small to report, the School declares. Every suggestion is copied and submitted to the critics without any indication of its source. Each suggestion is treated on its own merits.

Subjects of importance to the Corps of Engineers and on which ideas are particularly invited are: Bridges; camouflage; construction; design; drafting; equipment; logistics; machines; maintenance; maps; materials; methods; packing; photography; power; printing; publications; rigging; roads; safety; sanitation; specifications; standards; storage; strategy; surveying; tactics; traffic; training; transportation; water.

Send your suggestions on these subjects to the Engineer School, Fort Belvoir, Virginia.

Up-to-Date Handbook On Weights and Measures

Revised specifications, tolerances, and regulations for commercial weighing and measuring devices, recommended by the National Conference on Weights and Measures, have just been released in National Bureau of Standards Handbook H29. These are particularly important now, the Bureau points out, because certain of the recommendations on containers, scales, etc., are being incorporated in various Limitation Orders of the War Production Board.

The revised edition incorporates all changes adopted by the National Conference on Weights and Measures and recommended for promulgation by the States since publication of the earlier edition, NBS H22, in February 1938. The new document is, therefore, the same as a completely annotated copy of H22.

In providing for subsequent revisions, the new Handbook is arranged on a different plan from the old one. Instead of attaching all correction sheets to stubs at the back of the book, two or three blank pages are inserted after each of the several codes, and on these pages any corrections can be pasted, thus grouping related material and making the book handier to use.

Price of the new publication is 60 cents a copy. Orders should be sent to the Superintendent of Documents, Washington, D. C.

ASA Standards Activities

For the information of ASA Members a new section is added for the first time this month giving news of work in progress in ASA committees. This section cannot, of course, cover all the work now going forward in these committees but it will attempt to include the most important new developments.

Standards Available Since Our February Issue

Allowable Concentration of Chromic Acid and Chromates American Standard Z37.7-1943 20¢
Allowable Concentration of Mercury American Standard Z37.8-1943 20¢
Alloy-Steel Castings for Valves, Flanges, and Fittings for Service at Temperatures from 750 to 1100 F (ASTM A157-42) American Standard G36.1-1942 25¢
Free-Cutting Brass Rod for Use in Screw Machines (ASTM B16-42) American Standard H8-1942 25¢
Gas Burning Appliances
- Domestic Gas Ranges American Standard Z21.1-1942 $1.00
- Gas Space Heaters American Standard Z21.11-1942 $1.00
- Gas-Fired Duct Furnaces American Standard Z21.34-1942 $1.00

Gypsum Plastering, Specifications for American Standard A42.1-1942 25¢
Markings for Grinding Wheels American Standard B5.17-1943 25¢
Radio
- Recommended Practices for Loudspeaker Testing American Standard C16.4-1942 25¢
- Recommended Practices for Volume Measurement of Electrical Speech and Program Waves American Standard C16.5-1942 20¢

Seamless Alloy-Steel Boiler and Superheater Tubes (ASTM A213-42) American Standard B36.17-1942 25¢
Steel for Bridges and Buildings (ASTM A7-42) American Standard G24-1942 25¢
Textile Testing Machines (ASTM D76-42) American Standard H25.1-1943 25¢
Zinc
- Rolled Zinc (ASTM B69-39) American Standard H25.1-1943 25¢
- Slab Zinc (Spelter) (ASTM B6-37) American Standard H24.1-1943 25¢

Standards Approved Since Our February Issue

Graphical Electrical Symbols for Architectural Plans American Standard Z32.9-1943
Graphical Symbols for Power, Control and Measurement American Standard Z32.3-1943

Standards Being Considered by ASA for Approval

Cast-Iron Pipe Flanges and Flanged Fittings, Class 250 (Revision of B16b-1928)
Cold-Rolled Strip Steel (ASTM A109-38) G47
Colored Textiles, Fastness L14
Keyways for Holes in Gears B6.4
Lime
- Limestone, Quicklime, and Hydrated Lime, Methods of Chemical Analysis of (ASTM C25-29)
- Quicklime for Structural Purposes, Specifications for (ASTM C5-26)

Rotating Electrical Machinery Revision of C50-1936
Threaded Cast-Iron Pipe for Drainage, Vent, and Waste Services

Standards Submitted for Consideration Since Our February Issue

Zinc Coating of Iron and Steel
- Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses ASTM A120-42
- Zinc-Coated Steel Wire Strand ("Galvanized" and Class A ["Extra Galvanized"]) ASTM A122-41

New Project Approved

Allowable Concentration of Acrylonitrile Z37

Project Abolished

Speeds of Machinery Z18

American War Standards

Standards Approved and Published

Accuracy of Engine Lathes B5.16-1941 25¢
Allowable Concentration of Cadmium Z37.5-1941 20¢
Allowable Concentration of Manganese Z37.6-1942 20¢
Code for Electricity Meters (Revision of Paragraph 827) C12WS-1942 10¢
Color, Specification and Description of Z44-1942 25¢
Domestic Gas Ranges, Approval Requirements Z21.1ES-1942 $1.00
Electrical Indicating Instruments (2½ and 3½ Inch, Round, Flush-Mounting, Panel-Type) C39.2-1943 50¢
Fixed Mica-Dielectric Capacitors C75.3-1942 50¢
Gas Water Heaters, Approval Requirements Z21.10WS-1942 $1.00
Machine Tool Electrical Standards C74-1942 40¢
Photographic Exposure Computer Z38.2-1942 $1.00
Pressure-Temperature Ratings for Steel Pipe Flanges, Flanged Fittings and Valves (Revision of Tables 6 to 11 inclusive, American Standard B16e-1939) B16e5-1943
Protective Lighting for Industrial Properties A85-1942 50¢

War Standards Approved and Published—(Continued)

Quality Control
- Guide for Quality Control Z1.1-1941
- Control Chart Method of Analyzing Data Z1.2-1941

(In one Volume 75¢)
- Control Chart Method of Controlling Quality During Production Z1.3-1942 75¢

Straight Screw Threads for High-Temperature Bolting B1.4-1942 25¢

Standards Approved and Published Since Our February Issue

Ceramic Radio Insulating Materials, Class L C75.1-1943
Protective Occupational Footwear
- Men's Safety-Toe Shoes Z41.1-1943
- Men's Conductive Shoes Z41.3-1943
- Men's Explosives-Operations (Non-sparking Shoes Z41.4-1943
- Men's Electrical-Hazards Shoe Z41.5-1943
- Men's Foundry (Molders) Shoes Z41.6-1943

(In one Volume 40¢)
Women's Safety-Toe (Oxford) Shoes Z41.2-1943 25¢

War Standards Completed Since February—(Continued)

Replacement Parts for Civilian Radio
- Dry Electrolytic Capacitors (Home Receiver Replacement Type) C16.7-1943 20¢
- Home Radio Replacement Parts, Simplified List C16.8-1943 20¢
- Fixed Paper-Dielectric Capacitors (Home Receiver Replacement Type) C16.6-1943 20¢

Project Withdrawn

Allowable Concentration of Diethey Ether Z37

New Project Requested

Metal Fits, Tolerances, Allowances, and Gages Revision of B4a-1925

Standards Under Way

Acme Screw Threads for Aircraft B1
Allowable Concentration of Z37
- Metallic Arsenic and Arsenic Trioxide
- Xylene

Children's Sizes L11
Class 125 Cast-Iron Flanged Fittings B16a
Color Code for Lubricants for Machinery Z47
Goggles and Respiratory Equipment, Standardization and Simplification of Z2
Packages for Electronic Tubes Z45
Replacement Parts for Civilian Radio C16
Threading of General Purpose Nuts and Bolts B1
Truncated Whitworth Screw Threads B1
Welding Arc Hand Shields and Helmets Z2
Women's Industrial Clothes and Safety Clothes L17

Standards Under Way—(Continued)

Military Radio Equipment and Parts C75

1-2. Insulating Materials
- (a) Ceramics
- (b) Steatite
- (c) Porcelain
- (d) Glass
- (e) Glass-Bonded Mica
- (f) Treating, Filling, and Impregnating
- (g) Plastics
- (h) Plastic Communications Components

3. Capacitors—Fixed
- (a) Ceramic Dielectric
- (b) Paper Dielectric
- (c) Electrolytic

4. Capacitors—Variable
- (a) Receiver
- (b) Transmitter
- (c) Trimmer

5. Dynamotors and Similar Power Units

6. Crystals and Holders
- (a) Physical Characteristics
- (b) Specifications and Testing
- (c) Reference Test Circuits

7. Resistors—Fixed
- (a) Composition
- (b) Wire Wound
- (c) Instrument Type

8. Resistors—Variable
- (a) Composition
- (b) Wire Wound

9. Transformers
- (a) Power
- (b) Audio Frequency
- (c) Radio Frequency

10. Tube Sockets
- (a) Receiving
- (b) Transmitting
- (c) Cathode Ray

11. Connectors
- (a) Telephone Plugs and Jacks
- (b) Multicontact Plugs and Receptacles

12. Dry Batteries
- (a) Single Cell
- (b) Multicell

13. Vibrator Power Supplies

News About ASA Standards Projects

Abrasive Wheels, B7

A draft of a revised and enlarged American Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels is now being distributed to all members of the committee and is scheduled for discussion at a meeting April 1.

Compiling Industrial Accident Causes, Z16.2

Mr. William Johnson, Chief Statistician of the National Safety Council, has prepared a short comment on the use of this Cause Code by the NSC. He presents both the advantages which are provided by this code and also some of the problems which he has found in its application. Copies have been sent to the members of the ASA committee on Accident Statistics. A few extra copies are available for anyone who is interested.

Drawings and Drafting Room Practice, Z14.1

A proposed revision of American Standard Z14.1-1942 is now going forward. A draft is being circulated for comment and criticism. Comments may be addressed to Professor F. G. Higbee, chairman, Subcommittee on Revision, care of American Society of Mechanical Engineers, 29 West 39th Street, New York.

Elevators, A17

The Executive Committee of the ASA Committee on Elevators has just released two service bulletins which have been prepared quite informally but which nevertheless may be of real value to owners of elevators during the war emergency. These have been published as circulars of the National Bureau of Standards and may be obtained from the Superintendent of Documents, Washington, D. C., at 5 cents each. They are:
- Elevator Wire Rope Maintenance, C441
- Maintenance of Elevator Mechanical Safety Appliances, C442

Lead and Certain of Its Inorganic Compounds, Z37

First draft is being circulated to the committee

Machine Pins, B43

The ASA committee dealing with this project has been discharged and the work has been referred to the ASA committee on Small Tools and Machine Tool Elements, B5.

Methanol, Allowable Concentration of, Z37

First draft is being circulated to committee and other interested groups for comments and criticism.

Safety in Construction, A10

A final draft on Safety Code for Construction Work is being prepared for circulation.

Safety Code for Metal Cleaning, Z46

The American Foundrymen's Association has submitted to ASA its Code of Recommended Good Practices for Metal Cleaning Sanitation for approval. Since the original code was prepared for foundries, slight changes are being made to make the code applicable to all metal cleaning. The code is now being considered by the drafting subcommittee for Safety Code for Exhaust Systems.

Safety Code for Work in Compressed Air, Z28

Activity has been resumed after a lapse of ten years. The U. S. Navy and Public Health Service representatives are working out certain technicalities for inclusion in the first general draft.

Styrene Monomer, Allowable Concentration of, Z37

First draft is being circulated to the committee.

Surface Quality, B46

Comments received on the proposed American Standard, Surface Roughness, published in March 1940 for a trial period in practice have led to certain revisions. A new draft is now being prepared.

Woodworking Machinery, O1

At a recent meeting of the drafting subcommittee, a first draft of a revision of the Safety Code for Woodworking Machinery was prepared and is now being circulated to members of the sectional committee.

New American War Standard to help protect factory grounds from theft and sabotage

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